AGVIQ CH2M HILL

TRANSMITTAL OF CONTRACTOR'S SUBMITTAL

(ATTACH TO EACH SUBMITTAL)

DATE: 03/23/2012

To:	NAVFAC MIDLANT Mr. Greg Pearman gregory.pearman@marines.usmc.mil	From:	Don Conger, PE, AGVIQ-CH2M HILL (Contractor) Don.Conger@ch2m.com
CC:	christopher.shukis@navy.mil Lora.Fly@navy.mil	CC:	Jim.Nicotri@ch2m.com smatney@tikigaq.com Amy.Wolff@ch2m.com

SUBMITTAL INFORMATION		
Submittal No.:	042 010100-6 Crane Lift Plan	
☒ New Submittal		☐ Resubmittal
Project:	Interim Emergency Wellhead Treatment Aqua-NY Water Treatment Facility	
Project No.:	N62470-08-D-1006, TO No.: WE23	
Specification Section No.:	01 01 00	
Date of Submittal:	3/22/2012	

SUBMITTAL TYPE:		
☒ Shop Drawing	☐ Sample	☐ Informational
☐ Material Data	☐ Proposed Substitution	☐ Other

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Spec. and Para. No.	Drawing or Brochure Number	Contains Variation to Contract	
				No	Yes
1	PRI and Bay Crane – Crane Lift Plan	01 01 00, Section 2		☒	☐

The following information about the submission is hereby provided:

Crane Lift Plan
The enclosed Crane Lift Plan is being submitted Government approval be provided.

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: Donald R. Conger PE

CONTRACTOR (Authorized Signature)

Installation of Interim Emergency Treatment Liquid-Phase Granular Activated Carbon Units

Aqua New York, Inc., Seamans Neck Road Water Plant, NWIRP Bethpage, New York

Contract N62470-08-D-1006, Task Order WE23

Crane Lift Plan Table of Contents

Installation of Interim Emergency Treatment Liquid-Phase Granular Activated Carbon Units

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Contract N62470-08-D-1006, Task Order WE23

Crane Lift Plan Information Sheet

This Crane Lift Plan is being provided for the installation of three Carbon Adsorber System Vessels. The vessels are being provided by Calgon Carbon, and are fitted with lifting lugs. There will be three separate lifts, to place each vessel from the delivery truck, onto the concrete equipment pad.

Phillip Ross Industries is the General Contractor, and Bay Crane is the crane lift subcontractor.

Crane Lift Plan General Information:

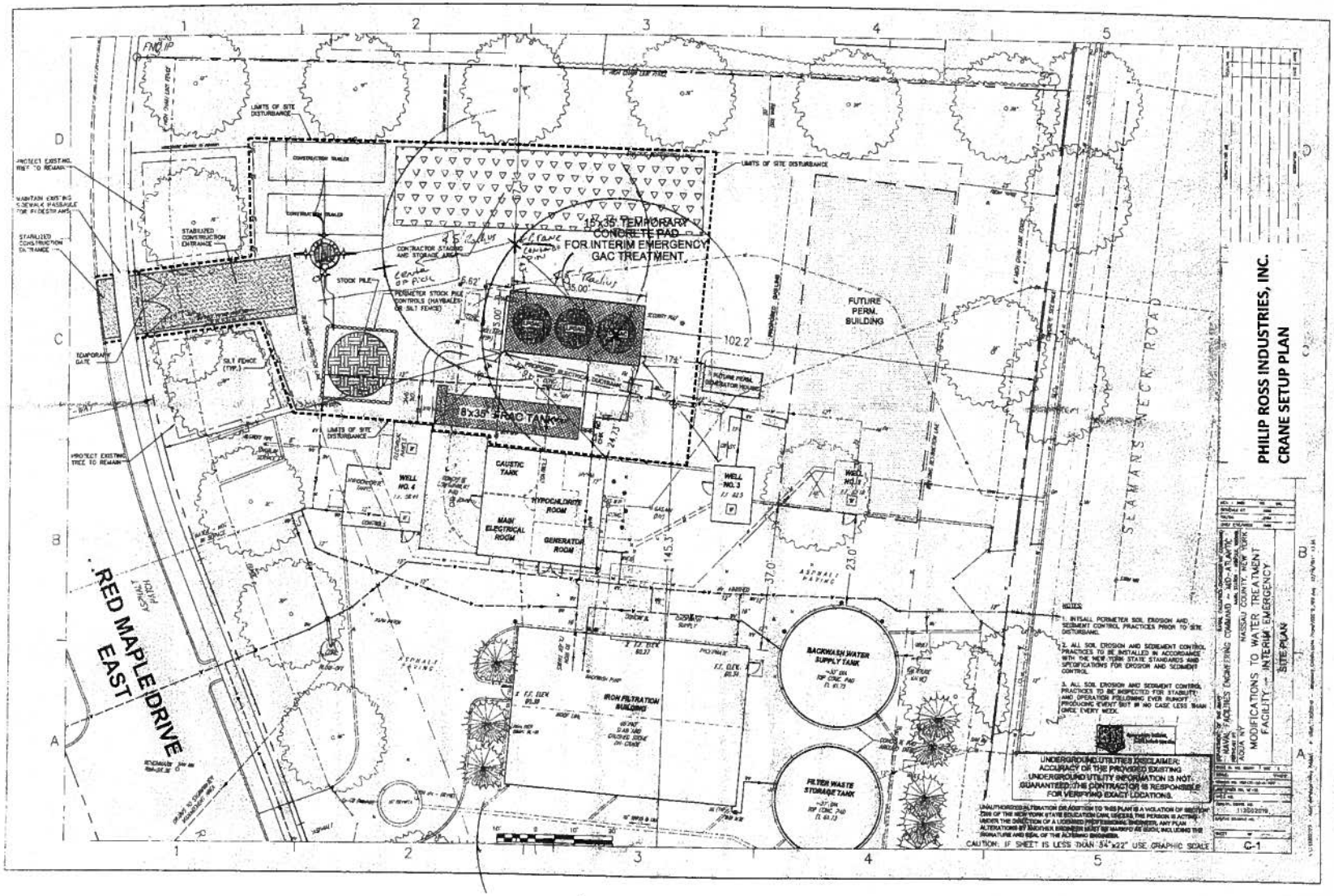
A. All lifts are "Non Critical"
B. Crane type: Tadano ATF65G
C. The boom length shall be 73.8 Feet, with a counterweight of 33,069 lbs.
D. Total Empty Tank Load = 17,000 lbs.
E. Per the crane charts, and the attached calculations, the crane will be lifting at 67.5% of its capacity at a maximum radius of 45-feet.
F. Cribbing required for all out riggers
G. Tag line restraint required for all lifts
H. There are no "Multiple Lifts"
I. Certificate of compliance will be in the cab of machine.
J. Attached Lift Day Checklists will be completed prior to lift.
K. Qualified rigger shall be Philip Carlucci.
L. There are no nearby overhead utilities.

4. Specific Lift Calculation Sheet

Tadano Faun ATF65G-4 73.8' Main boom; 33,069# ctwt. Lifting off main, maximum radius 45'					
Load		17,000			17,000
13.8T hook block		375			375
Rigging		300			300
Jib deduct (stowed)		900			900
Total		18,575			18,575
Crane Capacity	@ 45'	27,500		@ 50'	23,400
Percent Capacity		67.5%			79.4%

5. Crane Placement and Radius Site Drawing

NOTE: The final concrete pad location has shifted south and east by a few feet in order to avoid a conflict with the electrical line to the north of the pad. The crane location will be field adjusted to compensate for that difference. It can be seen on this drawing that a 45-foot radius will provide more than enough room to lift and place each of the three vessels. In addition, the delivery truck (pick point) can also be moved closer to the crane.


15'x35' TEMPORARY CONCRETE PAD FOR INTERIM EMERGENCY GAC TREATMENT
8'x35' GAC TANK
FUTURE PERM. BUILDING
SEAMANS NECK ROAD
RED MAPLE DRIVE EAST
CONSTRUCTION TRAILER
STABILIZED CONSTRUCTION ENTRANCE
STOCK PILE
SILT FENCE (TYP.)
TEMPORARY GATE
LIMITS OF SITE DISTURBANCE
CONTRACTOR STAGING AND STORAGE AREA
PERIMETER STOCK PILE CONTROLS (HAYBALES OR SILT FENCE)
PROTECT EXISTING TREE TO REMAIN
MAINTAIN EXISTING SIDEWALK PASSABLE FOR PEDESTRIANS
PROTECT EXISTING WALL TO REMAIN
CAUSTIC TANK
HYPOCHLORITE ROOM
MAIN ELECTRICAL ROOM
GENERATOR ROOM
WELL NO. 4
WELL NO. 3
WELL NO. 1
IRON FILTRATION BUILDING
BACKWASH WATER SUPPLY TANK
FILTER WASTE STORAGE TANK
FUTURE PERM. GENERATOR HOUSE
ASPHALT PAVING
102.2'
145.3'
37.0'
23.0'
NOTES
1. INSTALL PERIMETER SOIL EROSION AND SEDIMENT CONTROL PRACTICES PRIOR TO SITE DISTURBANCE.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL
3. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSPECTED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF PRODUCING EVENT BUT IN NO CASE LESS THAN ONCE EVERY WEEK.
UNDERGROUND UTILITIES DISCLAIMER: ACCURACY OF THE PROVIDED EXISTING UNDERGROUND UTILITY INFORMATION IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATIONS.
UNAUTHORIZED ALTERATION OR ADDITION TO THIS PLAN IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. UNLESS THE PERSON IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ANY PLAN ALTERATIONS BY ANOTHER ENGINEER MUST BE MARKED AS SUCH, INCLUDING THE SIGNATURE AND SEAL OF THE ALTERING ENGINEER.
CAUTION: IF SHEET IS LESS THAN 34"x22" USE GRAPHIC SCALE
PHILIP ROSS INDUSTRIES, INC.
CRANE SETUP PLAN
NAVAL FACILITIES ENGINEERING COMMAND – MID-ATLANTIC
NASSAU COUNTY, NEW YORK
MODIFICATIONS TO WATER TREATMENT FACILITY – INTERIM EMERGENCY
SITE PLAN
11302219
C-1

6. Rigging Information

- 6.1. Slings and Shackles Cut Sheets
- 6.2. Rigging Tackle Arrangement Drawings

Round Slings & Wear Pads

Round Slings

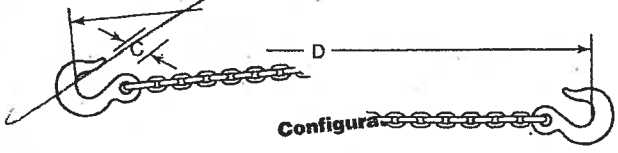
- Color-coded for quick identification
- Sling flattens against load to grip tightly
- Only 3% stretch for better load control

Resist sunlight (UV), grease, and most acids. Wear points of all endless-style slings shift with each use for maximum sling life. Temperature range: -50° to 200°F. All load fibers protected by a 2-woven cover. Eye and Eye style has an additional wear-resistant cover to extend sling life. Remove sling from service when red striped white core yarns are exposed. Meet or exceed all OSHA and ASME B30.9 standards.

L	Eye Length	Vertical Load	Choker Hitch Cap.	Basket Hitch Capacity	Width Under Load	Color Code	Dia. (in.)	DAYTON Item No.	DAYTON $ Each	LIFTALL Item No.	LIFTALL $ Each
Endless											
3 Ft.	—	2600 lbs.	2100 lbs.	5200 lbs.	1⅛"	Purple	⅝	2MJK3	12.64	4A767	14.67
4 Ft.	—	2600 lbs.	2100 lbs.	5200 lbs.	1⅛"	Purple	⅝	2MJK5	16.37	3KN75	18.99
6 Ft.	—	2600 lbs.	2100 lbs.	5200 lbs.	1⅛"	Purple	⅝	2MJK7	23.40	3KN76	27.25
8 Ft.	—	2600 lbs.	2100 lbs.	5200 lbs.	1⅛"	Purple	⅝	2MJK9	30.85	3KN77	36.35
10 Ft.	—	2600 lbs.	2100 lbs.	5200 lbs.	1⅛"	Purple	⅝	2MJL2	36.75	2RU52	44.40
3 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJL4	16.73	3KN79	19.42
4 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJL6	21.46	3KN80	24.49
6 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJL7	30.60	4A768	35.50
8 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJL8	39.85	4A769	46.15
10 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJL9	50.00	3KN78	57.00
12 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJN1	54.90	2RU53	65.45
20 Ft.	—	5300 lbs.	4200 lbs.	10,600 lbs.	1½"	Green	⅞	2MJN2	88.75	2RU54	107.15
3 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN3	21.91	2RU55	26.70
4 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN4	28.80	3KN81	33.50
6 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN5	41.65	3KN82	47.45
8 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN6	54.25	3KN83	61.85
10 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN7	66.85	4A770	76.20
12 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN8	73.30	2RU56	88.65
20 Ft.	—	8400 lbs.	6700 lbs.	16,800 lbs.	1⅞"	Yellow	1⅛	2MJN9	118.00	2RU57	143.85
6 Ft.	—	13,200 lbs.	10,600 lbs.	26,400 lbs.	2¼"	Red	1⅜	2MJP1	57.90	2RU58	70.35
8 Ft.	—	13,200 lbs.	10,600 lbs.	26,400 lbs.	2¼"	Red	1⅜	2MJP2	78.05	3KN73	90.20
10 Ft.	—	13,200 lbs.	10,600 lbs.	26,400 lbs.	2¼"	Red	1⅜	2MJP3	95.40	3KN72	111.00
12 Ft.	—	13,200 lbs.	10,600 lbs.	26,400 lbs.	2¼"	Red	1⅜	2MJP4	107.90	2RU59	131.50
20 Ft.	—	13,200 lbs.	10,600 lbs.	26,400 lbs.	2¼"	Red	1⅜	2MJP5	176.00	2RU60	213.00
6 Ft.	—	21,200 lbs.	17,000 lbs.	42,400 lbs.	3"	Blue	1¾	2MJP6	88.85	2RU61	109.60
8 Ft.	—	21,200 lbs.	17,000 lbs.	42,400 lbs.	3"	Blue	1¾	2MJP7	115.20	2RU62	142.95
10 Ft.	—	21,200 lbs.	17,000 lbs.	42,400 lbs.	3"	Blue	1¾	2MJP8	149.90	3KN74	177.75
12 Ft.	—	21,200 lbs.	17,000 lbs.	42,400 lbs.	3"	Blue	1¾	2MJP9	169.25	2RU63	209.00
20 Ft.	—	21,200 lbs.	17,000 lbs.	42,400 lbs.	3"	Blue	1¾	2MJR1	274.50	2RU64	336.50
Eye & Eye											
4 Ft.	10"	2600 lbs.	2100 lbs.	5200 lbs.	2¼"	Purple	—	2MJR2	30.85	2RU65	35.10
6 Ft.	10"	2600 lbs.	2100 lbs.	5200 lbs.	2¼"	Purple	—	2MJR3	43.90	2RU66	51.95
4 Ft.	10"	5300 lbs.	4200 lbs.	10,600 lbs.	2¼"	Green	—	2MJR4	35.95	—	—
6 Ft.	10"	5300 lbs.	4200 lbs.	10,600 lbs.	2¼"	Green	—	2MJR5	52.35	—	—
4 Ft.	12"	8400 lbs.	6700 lbs.	16,800 lbs.	2½"	Yellow	—	2MJR6	44.15	2RU69	52.10
6 Ft.	12"	8400 lbs.	6700 lbs.	16,800 lbs.	2½"	Yellow	—	2MJR7	64.20	2RU70	75.75
4 Ft.	10"	5300 lbs.	4200 lbs.	10,600 lbs.	2½"	Green	—	—	—	2RU67	42.55
6 Ft.	10"	5300 lbs.	4200 lbs.	10,600 lbs.	2½"	Green	—	—	—	2RU68	61.80

Chain Slings

Handle odd-shaped, hard-to-position loads using either 1- or 2-point lifts. Proof tested and supplied with certificate of test. Uses: Machine shops and maintenance areas where headroom is limited, with portable hydraulic cranes and balanced or unbalanced loads.



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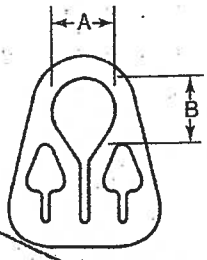


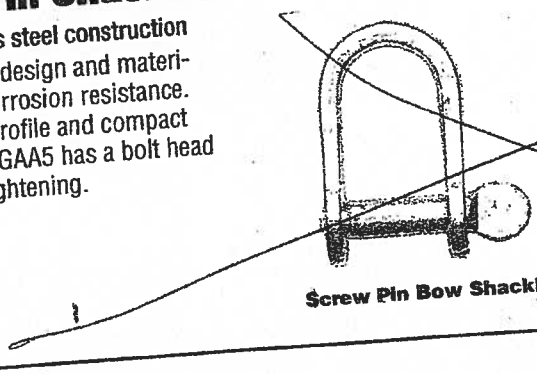
Dimensions

nackles & Web Slings

Screw Pin Shackles

- 316 stainless steel construction

Marine-grade design and materials provide corrosion resistance. Feature low-profile and compact design. No. 5GAA5 has a bolt head for wrench tightening.



Screw Pin Bow Shackle

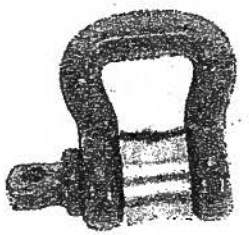
Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Item No.	$ Each
Screw Pin Bow Shackle					
660 lb.	7/16"	5/32"	5/32"	5FZZ3	6.29
880 lb.	1/2"	3/16"	3/16"	5FZZ4	6.07
1545 lb.	5/8"	1/4"	1/4"	5FZZ5	8.83
2975 lb.	7/8"	5/16"	5/16"	5FZZ6	14.43
4960 lb.	1 3/16"	3/8"	3/8"	5FZZ7	30.95
Screw Pin D Shackle					
310 lb.	1 1/32"	1/8"	1/8"	5FZZ8	6.54
660 lb.	13/32"	5/32"	1/8"	5FZZ9	5.91
880 lb.	7/16"	3/16"	3/16"	5GAA0	5.21
1545 lb.	9/16"	1/4"	1/4"	5GAA1	7.8
2795 lb.	5/8"	5/16"	9/32"	5GAA2	12.1
3970 lb.	2 1/32"	3/8"	5/16"	5GAA3	20.9
8265 lb.	3/4"	1/2"	3/8"	5GAA4	42.1
12,125 lb.	1"	5/8"	1/2"	5GAA5	103.3

Day

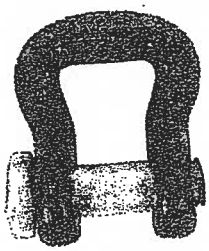
Web Sling Shackles

- Dayton have red enamel finish
- CM are galvanized per ASTM A153
- Heat-treated carbon steel body and alloy steel load pin
- Meet Federal RR-C271D standards

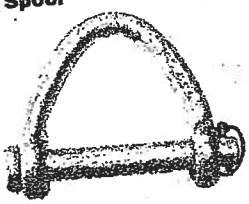
Extra-wide bow, and nonslip surface reduce bunching and sliding. Spools u separately) center attachments and also prevent sliding.



Screw Pin Web Sling Shackle with Optional Spool



Safety Pin Web Sling Shackle



Loose Pin and Cotter Key Web Sling Shackle

Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Brand	Screw Pin Web Sling Shackles Item No.	Screw Pin Web Sling Shackles $ Each	Safety Pin Web Sli Shackles Item No.	Safety Pin Web Sli Shackles $ Each
6500 lb.	7/8"	3/4"	3/4"	Dayton	2MWX9	31.10	2MWY7	28.5
13,000 lb.	1 1/4"	7/8"	1"	Dayton	2MWY1	34.90	2MWY8	53.7
17,500 lb.	1 3/8"	1"	1 1/8"	Dayton	2MWY2	46.25	2MWY9	71.5
25,000 lb.	1 5/8"	1 1/4"	1 3/8"	Dayton	2MWY3	99.80	2MWZ1	131.2
41,000 lb.	2 1/8"	1 1/2"	1 3/4"	Dayton	2MWY4	204.00	2MWZ2	235.5
70,000 lb.	2 1/2"	2"	2 1/4"	Dayton	4EGA8	356.00	4EGC1	408.1
100,000 lb.	3"	2 1/4"	2 3/4"	Dayton	4EGA9	705.00	4EGC2	746.3

Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Brand
Loose Pin and Cotter Key Web Sling Shackles				
8050 lb.	2"	3/4"	5/8"	CM
13,050 lb.	3"	7/8"	3/4"	CM
10,800 lb.	4"	7/8"	3/4"	CM
18,000 lb.	5"	1"	7/8"	CM
18,000 lb.	6"	1 1/8"	1"	CM
23,850 lb.	6"	1 1/4"	1 1/8"	CM
Bolt, Nut and Latch Pin Web Sling Shackles				
14,500 lb.	4"	1"	3/4"	CM
19,000 lb.	5"	1 1/8"	1"	CM
22,500 lb.	6"		1 1/8"	CM

Nylon Web Slings

Durable, easy-to-use slings in Eye and Eye, Endless Loop, and Reverse Eye styles. All slings tested to meet OSHA and ASME/ANSI B30.9A Standards. Operating temperature rating: -40° to 194°F.

EYE AND EYE

10"-long eyes on both ends. For use in choker and basket configurations.

Endless Loop

Extend sling life by repositioning wear points with every use. For use in vertical, choker, and basket configurations.

No. 1DMP8 Sling Set

Set of 3 slings. Contains 1 of each length: 30", 40", and 50".

REVERSE EYE

Eyes lie open; use both sides to prolong sling life. Use mainly in choker and basket configurations.

Web Width	L	Vertical Load	Choker Hitch Cap.	Basket Hitc Capacity
Eye & Eye				
1"	3 ft.	1000 lb.	800 lb.	2000 lb.
1"	3 ft.	2000 lb.	1600 lb.	4000 lb.
1"	6 ft.	1000 lb.	800 lb.	2000 lb.
1"	6 ft.	2000 lb.	1600 lb.	4000 lb.
2"	4 ft.	2000 lb.	1600 lb.	4000 lb.
2"	4 ft.	4000 lb.	3200 lb.	8000 lb.
2"	6 ft.	2000 lb.	1600 lb.	4000 lb
2"	6 ft.	4000 lb.	3200 lb.	8000 lb
Endless Loop				
1"	3 ft.	2000 lb.	1600 lb.	4000 lb
1"	3 ft.	4000 lb.	3200 lb.	8000 lb
1"	6 ft.	2000 lb.	1600 lb.	4000 lb
1"	6 ft.	4000 lb.	3200 lb.	8000 lb
2"	4 ft.	4000 lb.	3200 lb.	8000 lb
2"	4 ft.	8000 lb.	6400 lb.	16,000
2"	6 ft.	4000 lb.	3200 lb.	8000
2"	6 ft.	8000 lb.	6400 lb.	16,000
Endless Loop Sling Set, Pkg. of 3*				
1"	—	2000 lb.	1600 lb.	4000

** One each of 30, 40, and 50" sling.*

No. of Plies	Web Width	L	Eye Length	Vertical Load	Choker Hitch Cap.	E
					2600 lb.	

17/32"	3/8"	5/16"	1500 lb.	2MWP1	6.35	2000 lb.	4JYW4	8.54
21/32"	7/16"	3/8"	2000 lb.	2MWP2	6.47	3000 lb.	4JYW5	10.17
3/4"	1/2"	7/16"	3000 lb.	2MWP3	7.34	4000 lb.	4JYW6	12.37
13/16"	5/8"	1/2"	4000 lb.	3DPC1	9.57	6000 lb.	3YB17	16.69
1 1/16"	3/4"	5/8"	6500 lb.	3DPC2	17.39	9000 lb.	3YB18	23.94
1 1/4"	7/8"	3/4"	9500 lb.	3DPC3	25.05	13,000 lb.	3YB19	35.15
1 1 1/16"	1"	7/8"	13,000 lb.	3DPC4	32.55	—	—	—
1 7/16"	1"	7/8"	—	—	—	17,000 lb.	3YB20	49.05
1 7/16"	1 1/8"	1"	17,000 lb.	3DPC5	44.00	—	—	—
1 1 1/16"	1 1/8"	1"	—	—	—	20,000 lb.	3YB21	67.25
1 13/16"	1 1/4"	1 1/8"	19,000 lb.	3DPC6	69.90	24,000 lb.	3YB22	87.65
2 3/8"	1 3/8"	1 1/4"	24,000 lb.	3DPC7	92.10	—	—	—
2 1/32"	1 3/8"	1 1/4"	—	—	—	28,000 lb.	3YB23	117.55
2 1/4"	1 1/2"	1 3/8"	34,000 lb.	3DPC8	112.75	34,000 lb.	3YB24	154.75
2 3/8"	1 3/4"	1 1/2"	50,000 lb.	2MWP4	170.50	—	—	—
2 3/8"	1 3/4"	1 1/2"	—	—	—	40,000 lb.	4JYW7	207.50
2 7/8"	2"	1 3/4"	70,000 lb.	2MWP5	272.50	—	—	—
2 7/8"	2"	1 3/4"	—	—	—	60,000 lb.	4JYW8	307.50

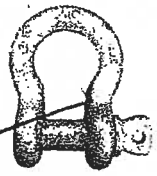
17/32"	3/8"	5/16"	2500 lb.	2MWR2	8.42	3000 lb.	2FF	
21/32"	7/16"	3/8"	4000 lb.	2MWR3	8.58	4000 lb.	4JY	
3/4"	1/2"	7/16"	5200 lb.	2MWR4	9.77	5200 lb.	4J	
13/16"	5/8"	1/2"	6600 lb.	3DPC9	19.34	6600 lb.	2Y	
1 1/16"	3/4"	5/8"	10,000 lb.	3DPD1	25.65	10,000 lb.	2Y	
1 1/4"	7/8"	3/4"	14,000 lb.	3DPD2	39.00	14,000 lb.	2Y	
1 1 1/16"	1"	7/8"	19,000 lb.	3DPD3	44.70	—	-	
1 7/16"	1 1/8"	1"	25,000 lb.	3DPD4	55.90	—	-	
1 13/16"	1 1/4"	1 1/8"	30,000 lb.	3DPD5	67.35	30,000 lb.	2Y	
2 3/8"	1 3/8"	1 1/4"	36,000 lb.	3DPD6	84.45	—	-	
2 1/4"	1 1/2"	1 3/8"	42,000 lb.	2MWR5	132.15	—	-	
2 1/4"	1 1/2"	1 1/2"	68,000 lb.	3DPD7	152.00	—	-	
2 7/8"	2"	1 3/4"	86,000 lb.	2MWR6	306.50	—	-	
1 7/16"	1"	7/8"	—	—	—	19,000 lb.	2Y	
1 1 1/16"	1 1/8"	1"	—	—	—	25,000 lb.	2Y	
2 1/32"	1 3/8"	1 1/4"	—	—	—	36,000 lb.	2Y	
2 3/8"	1 3/4"	1 3/8"	—	—	—	70,000 lb.	2Y	
2 1/4"	1 1/2"	1 3/8"	—	—	—	42,000 lb.	4J	
2 7/8"	2"	1 3/4"	—	—	—	80,000 lb.	4J	

Screw Pin Anchor Shackles

Dayton

- Galvanized per ASTM A153
- Forged, heat-treated body and pin
- Alloy steel shackles meet Federal RR-C271D standards

For applications where the shackle is removed frequently. Each features safety pin for added security. Shackles are permanently marked with size and working load limit (WLL), in tons.



Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Dayton Item No.	Dayton $ Each	CM Item No.	CM $ Each
Forged Steel Body with Alloy Steel Pin							
650 lb.	3/8"	1/4"	3/16"	2XY20	5.61	2G786	7.89
1000 lb.	15/32"	5/16"	1/4"	2XY21	7.11	2G788	8.95
1500 lb.	17/32"	3/8"	5/16"	2XY22	7.30	2G790	9.65
3000 lb.	3/4"	1/2"	7/16"	2XY29	9.10	4ZZ12	11.45
2000 lb.	21/32"	7/16"	3/8"	2XY23	8.80	2G792	11.21
4000 lb.	13/16"	5/8"	1/2"	2XY24	11.61	2G794	14.75
6500 lb.	1 1/16"	3/4"	5/8"	2XY25	18.69	2G796	23.43
9500 lb.	1 1/4"	7/8"	3/4"	2XY26	21.66	2G798	24.78
13,000 lb.	1 7/16"	1"	7/8"	2XY27	33.10	2G800	42.05
17,000 lb.	1 1 1/16"	1 1/8"	1"	2XY28	44.65	2G802	55.50
19,000 lb.	1 13/16"	1 1/4"	1 1/8"	2XY30	70.60	4ZZ13	84.15
24,000 lb.	2 1/32"	1 3/8"	1 1/4"	2XY31	95.90	4ZZ14	115.25
27,000 lb.	2 1/4"	1 1/2"	1 3/8"	2MWN5	89.50	—	—
34,000 lb.	2 3/8"	1 3/4"	1 1/2"	2MWN6	130.15	—	—
50,000 lb.	2 7/8"	2"	1 3/4"	2MWN7	230.50	—	—

Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Ite No
Forged Steel Alloy and Pin				
1000 lb.	3/8"	1/4"	3/16"	2XY
1500 lb.	15/32"	5/16"	1/4"	2XY
2500 lb.	17/32"	3/8"	5/16"	2XY
4000 lb.	21/32"	7/16"	3/8"	2XY
5200 lb.	23/32"	1/2"	7/16"	2XY
6600 lb.	13/16"	5/8"	1/2"	2XY
10,000 lb.	1 1/16"	3/4"	5/8"	2XY
14,000 lb.	1 1/4"	7/8"	3/4"	2XY
19,000 lb.	1 7/16"	1"	7/8"	2XY
25,000 lb.	1 1 1/16"	1 1/8"	1"	2XY
30,000 lb.	1 13/16"	1 1/4"	1 1/8"	2XY
36,000 lb.	2 1/32"	1 3/8"	1 1/4"	2XY
42,000 lb.	2 1/4"	1 1/2"	1 3/8"	2MV
60,000 lb.	2 3/8"	1 3/4"	1 1/2"	2MV
80,000 lb.	2 7/8"	2"	1 3/4"	2MV

Long-Reach D-Shackles

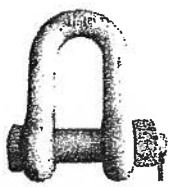
Dayton

Working Load Limit	Width Between Eyes	Pin or Bolt Dia.	Body Size	Brand	Screw Pin Long-Reach D-Shackles Item No.	Screw Pin Long-Reach D-Shackles $ Each	Safety Pin Long-Reach D-Shackles Item No.	Safety Pin Long-Reach D-Shackles $ Each
1000 lb.	13/32"	5/16"	1/4"	Dayton	2MWR7	4.98	2MWU1	7.10
1500 lb.	15/32"	3/8"	5/16"	Dayton	2MWR8	5.53	2MWU2	8.03
2000 lb.	17/32"	7/16"	3/8"	Dayton	2MWR9	6.40	2MWU3	8.73
3000 lb.	3/4"	1/2"	7/16"	Dayton	2MWT1	8.36	2MWU4	11.56
4000 lb.	13/16"	5/8"	1/2"	Dayton	2MWT2	7.41	2MWU5	13.10
7170 lb.	1 1/16"	3/4"	5/8"	Dayton	2MWT3	14.31	2MWU6	20.67
10,000 lb.	2 3/4"	7/8"	3/4"	CM	2YE99	40.65	—	—
19,000 lb.	3 1/4"	1"	1"	CM	2YJ10	52.70	—	—
17,000 lb.	1 1 1/16"	1 1/8"	1"	Dayton	2MWT4	40.95	2MWU9	48.15
19,000 lb.	1 13/16"	1 1/4"	1 1/8"	Dayton	2MWT5	55.85	2MWX1	65.75
24,000 lb.	2 1/32"	1 3/8"	1 1/4"	Dayton	2MWT6	67.80	2MWX2	105.65
34,000 lb.	4 1/2"	1 7/8"	1 1/2"	CM	2YJ13	140.10	—	—
34,000 lb.	2 3/8"	1 3/4"	1 1/2"	Dayton	2MWT7	130.40	2MWX4	150.25
50,000 lb.	2 7/8"	2"	1 3/4"	Dayton	2MWT8	224.50	2MWX5	267.75
70,000 lb.	3 1/4"	2 1/4"	2"	Dayton	2MWT9	276.00	2MWX6	340.25
10,000 lb.	2 3/4"	7/8"	3/4"	CM	2YJ11	45.85	—	—
19,000 lb.	3 1/4"	1"	1"	CM	2YJ12	56.20	—	—
34,000 lb.	4 1/2"	1 5/8"	1 1/2"	CM	2YJ14	117.90	—	—
10,475 lb.	1 1/4"	7/8"	3/4"	Dayton	—	—	2MWU7	27.40
13,000 lb.	1 7/16"	1"	7/8"	Dayton	—	—	2MWU8	41.30
27,000 lb.	2 1/4"	1 1/2"	1 3/8"	Dayton	—	—	2MWX3	132.25

- Heat-treated, tempered alloy steel
- Meet Federal RR-C271D standards

For applications where shackle is re frequently. Extended body increase connection and restricts rigging lin With safety pin for extra security. P marked with size and working load in tons.

No. 2MWR7

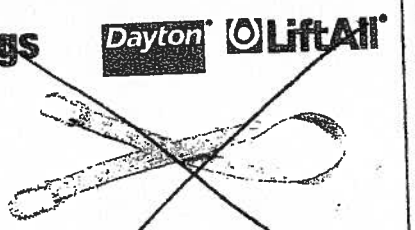


No. 2MWU1

Warning! Do not exceed working load limit.

slings

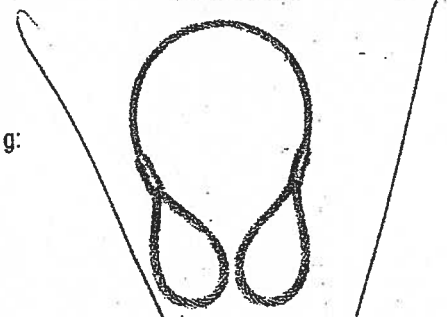
Dayton LiftAll



asket Hitch Capacity	DAYTON Item No.	DAYTON $ Each	LIFTALL Item No.	LIFTALL $ Each
6400 lb.	1DNG4	81.20	6A251	86.20
12,800 lb.	1DNG5	161.00	6A252	176.50
12,800 lb.	1DNG6	172.25	6A253	191.75

gs

Dayton LiftAll



g:

Rated Capacity of Basket	DAYTON Item No.	DAYTON $ Each	LIFTALL Item No.	LIFTALL $ Each
1.3 tons	1DNG7	17.39	2RU71	19.76
1.3 tons	1DNG8	19.10	2RU72	20.99
1.3 tons	1DND9	21.17	1A591	23.45
2.9 tons	1DNG9	22.70	2RU73	24.70
2.9 tons	1DNH2	24.98	2RU75	27.25
2.9 tons	1DNF6	26.45	4ZT78	29.65
2.9 tons	1DNE1	30.00	1A592	33.10
2.9 tons	1DNF7	33.50	4ZT79	37.00
2.9 tons	1DNF5	42.40	4ZT77	47.00
5.1 tons	1DNE8	38.75	4ZT69	43.20
5.1 tons	1DNE2	44.05	1A593	49.30
5.1 tons	1DNE3	49.40	1A594	54.25
5.1 tons	1DNE6	56.45	4ZT67	61.60
5.1 tons	1DNE7	61.30	4ZT68	67.80
5.1 tons	1DNH1	82.25	2RU74	89.30
7.8 tons	1DNG1	59.60	4ZT82	65.30
7.8 tons	1DNG2	66.40	4ZT83	72.75
7.8 tons	1DNG3	74.30	4ZT84	81.40
7.8 tons	1DNF8	83.05	4ZT80	90.55
7.8 tons	1DNF9	88.90	4ZT81	97.85
7.8 tons	1DNH3	111.80	2RU76	122.40
11 tons	1DNF2	77.30	4ZT74	85.05
11 tons	1DNF3	86.60	4ZT75	95.50
11 tons	1DNF4	99.15	4ZT76	108.95
11 tons	1DNE9	111.55	4ZT72	122.40
11 tons	1DNF1	123.20	4ZT73	134.60
11 tons	1DNH4	157.75	2RU77	174.25
20 tons	1DNE4	196.00	4ZT65	216.00
20 tons	1DNE5	213.00	4ZT66	234.25
20 tons	1DNH5	267.75	2RU78	293.75

Dayton LiftAll

perty
jury. Attach
op fastener

Regular-Duty—Made from sling webbing for outstanding flexibility.

Heavy-Duty—Made from felt for

Nylon Web Slings

Dayton

Durable, easy-to-use slings in Eye and Eye, Endless Loop, and Reverse Eye styles. Operating temperature rating: -40° to 194°F. Meet OSHA and ASME/ANSI B30.9A Standards.

EYE AND EYE

10"-long eyes on both ends. For use in choker and basket configurations.

ENDLESS LOOP

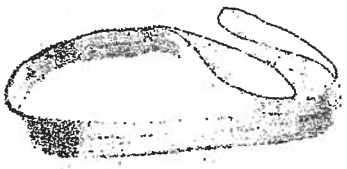
Extend sling life by repositioning wear points with every use. For use in vertical, choker, and basket configurations.

REVERSE EYE

Eyes lie open; use both sides to prolong sling life. Use mainly in choker and basket configurations.

NO. 1DMP8 SLING SET

Set of 3 slings. Contains 1 of each length: 30", 40", and 50".



Light-Duty Eye and Eye

Endless Loop

Reverse Eye

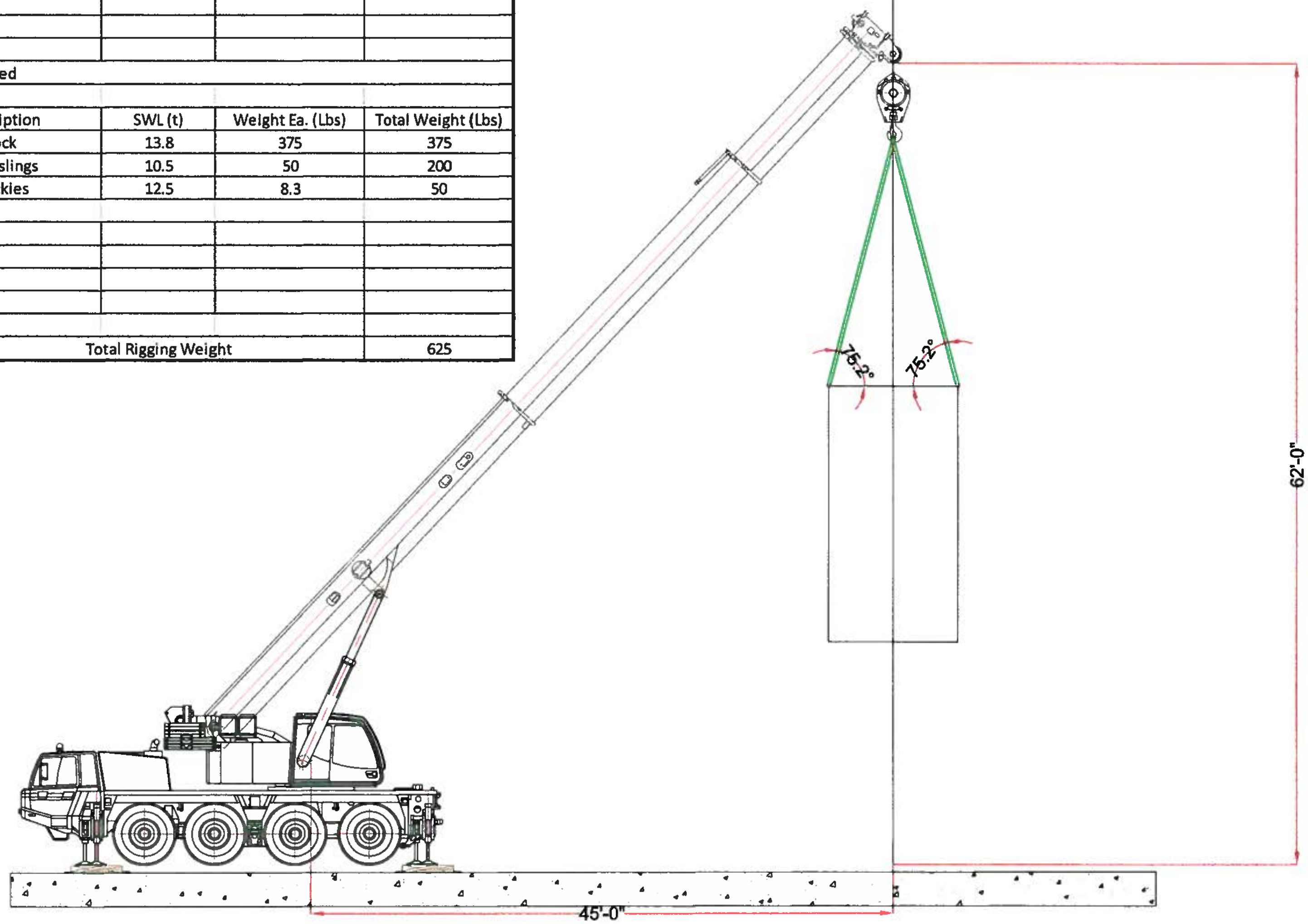
W	L	Eye Length	Vertical Load	Choker Hitch Cap.	Basket Hitch Capacity	Item No.	$ Each
Eye & Eye							
—	3 ft.	10"	1000 lb.	800 lb.	2000 lb.	1DMU2	13.19
—	3 ft.	10"	2000 lb.	1600 lb.	4000 lb.	1DMU4	19.88
—	6 ft.	10"	1000 lb.	800 lb.	2000 lb.	1DMU3	20.21
—	6 ft.	10"	2000 lb.	1600 lb.	4000 lb.	1DMU5	26.00
—	4 ft.	10"	2000 lb.	1600 lb.	4000 lb.	1DMU6	20.21
—	4 ft.	10"	4000 lb.	3200 lb.	8000 lb.	1DMU8	33.15
—	6 ft.	10"	2000 lb.	1600 lb.	4000 lb.	1DMU7	26.45
—	6 ft.	10"	4000 lb.	3200 lb.	8000 lb.	1DMR4	38.95
Endless Loop							
—	3 ft.	—	2000 lb.	1600 lb.	4000 lb.	1DMT5	13.41
—	3 ft.	—	4000 lb.	3200 lb.	8000 lb.	1DMT7	20.13
—	6 ft.	—	2000 lb.	1600 lb.	4000 lb.	1DMT6	20.13
—	6 ft.	—	4000 lb.	3200 lb.	8000 lb.	1DMT8	26.90
—	4 ft.	—	4000 lb.	3200 lb.	8000 lb.	1DMP9	20.13
—	4 ft.	—	8000 lb.	6400 lb.	16,000 lb.	1DMR1	33.70
—	6 ft.	—	4000 lb.	3200 lb.	8000 lb.	1DMT9	26.90
—	6 ft.	—	8000 lb.	6400 lb.	16,000 lb.	1DMU1	40.30
Endless Loop Sling Set, Pkg. of 3							
1 in.	—	—	2000 lb.	1600 lb.	4000lb.	1DMP8	36.70

No. of Plies	W	L	Eye Length	Vertical Load	Choker Hitch Cap.	Basket Hitch Capacity	Item No.	$ Each
Reverse Eye								
1	—	4 ft.	10"	4600 lb.	3680 lb.	9200 lb.	1DMR2	24.76
2	—	4 ft.	12"	7700 lb.	6160 lb.	15,400 lb.	1DMR7	37.25
1	—	6 ft.	10"	4600 lb.	3680 lb.	9200 lb.	1DMR5	37.85
2	—	6 ft.	12"	7700 lb.	6160 lb.	15,400 lb.	1DMR3	48.70
1	—	8 ft.	10"	4600 lb.	3680 lb.	9200 lb.	1DMR6	50.40
2	—	8 ft.	12"	7700 lb.	6160 lb.	15,400 lb.	1DMR8	72.90
1	—	6 ft.	12"	9200 lb.	7360 lb.	18,400 lb.	1DMR9	56.65
1	—	8 ft.	12"	9200 lb.	7360 lb.	18,400 lb.	1DMT1	75.45
2	—	8 ft.	12"	15,500 lb.	12,400 lb.	31,000 lb.	1DMT3	112.55
1	—	12 ft.	12"	9200 lb.	7360 lb.	18,400 lb.	1DMT2	110.70
2	—	12 ft.	12"	15,500 lb.	12,400 lb.	31,000 lb.	1DMT4	157.25

Rigging Component Loads					
Item #	Vertical Load	Angle	Tension	V. Capacity	Tension is X% of V. Cap.
2	4,250 Lbs	75.2°	4,396 Lbs	27,600 Lbs	15.9%
4	4,250 Lbs	75.2°	4,396 Lbs	25,000 Lbs	17.0%

Note: Worst-case rounded loads used

Item #	Qty	Description	SWL (t)	Weight Ea. (Lbs)	Total Weight (Lbs)
1	1	13.8T hook block	13.8	375	375
2	4	20' x 3" round slings	10.5	50	200
4	6	12.5 T pin shackles	12.5	8.3	50
		Total Rigging Weight			625



BAY CRANE

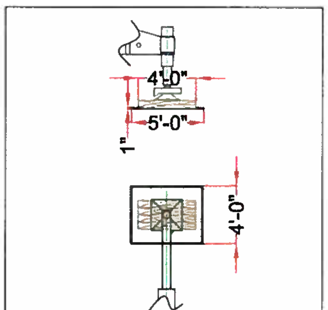
Bay Crane Service of Long Island
389 New South Road, Hicksville, NY 11801
Tel: 516 937 1523 Fax: 516 937 3672
www.baycrane.com

Rev.	Description	Drawn	Date	Appr.
0	Issued for Comment & Review	PS	[illegible]	
1	Addition of Component Analysis	PS	[illegible]	
2	O.R Criteria Added	PS	[illegible]	

CLIENT: NAVFAC
LOCATION: Aqua Water
PROJECT: G.A.C. Filters
Print Size: TABLOID (11x17)
Scale: As Shown
Ref: E-032212
Drawing No.: 032212-100-001-1
SHEET: 1 of 1

TITLE: Rigging Tackle Arrangement for the Installation G.A.C. units

Rigging Component Loads					
Item #	Vertical Load	Angle	Tension	V. Capacity	Tension is X% of V. Cap.
2	4,250 Lbs	69.5°	4,537 Lbs	27,600 Lbs	16.4%
3	4,250 Lbs	69.6°	4,534 Lbs	21,200 Lbs	20.0%
4	4,250 Lbs	69.0°	4,552 Lbs	25,000 Lbs	18.2%
5	4,250 Lbs	69.6°	4,534 Lbs	17,000 Lbs	25.0%
Note: Worst-case rounded loads used					
Item #	Qty	Description	SWL (t)	Weight Ea. (Lbs)	Total Weight (Lbs)
1	1	13.8T hook block	13.8	375	375
2	2	20' x 3" round slings	10.5	50	100
3	2	10' x 3" round slings	10.5	35	70
4	6	12.5 T pin shackles	12.5	8.3	50
5	2	12' x 3" round slings (choke)	10.5	40	80
				Total Rigging Weight	675

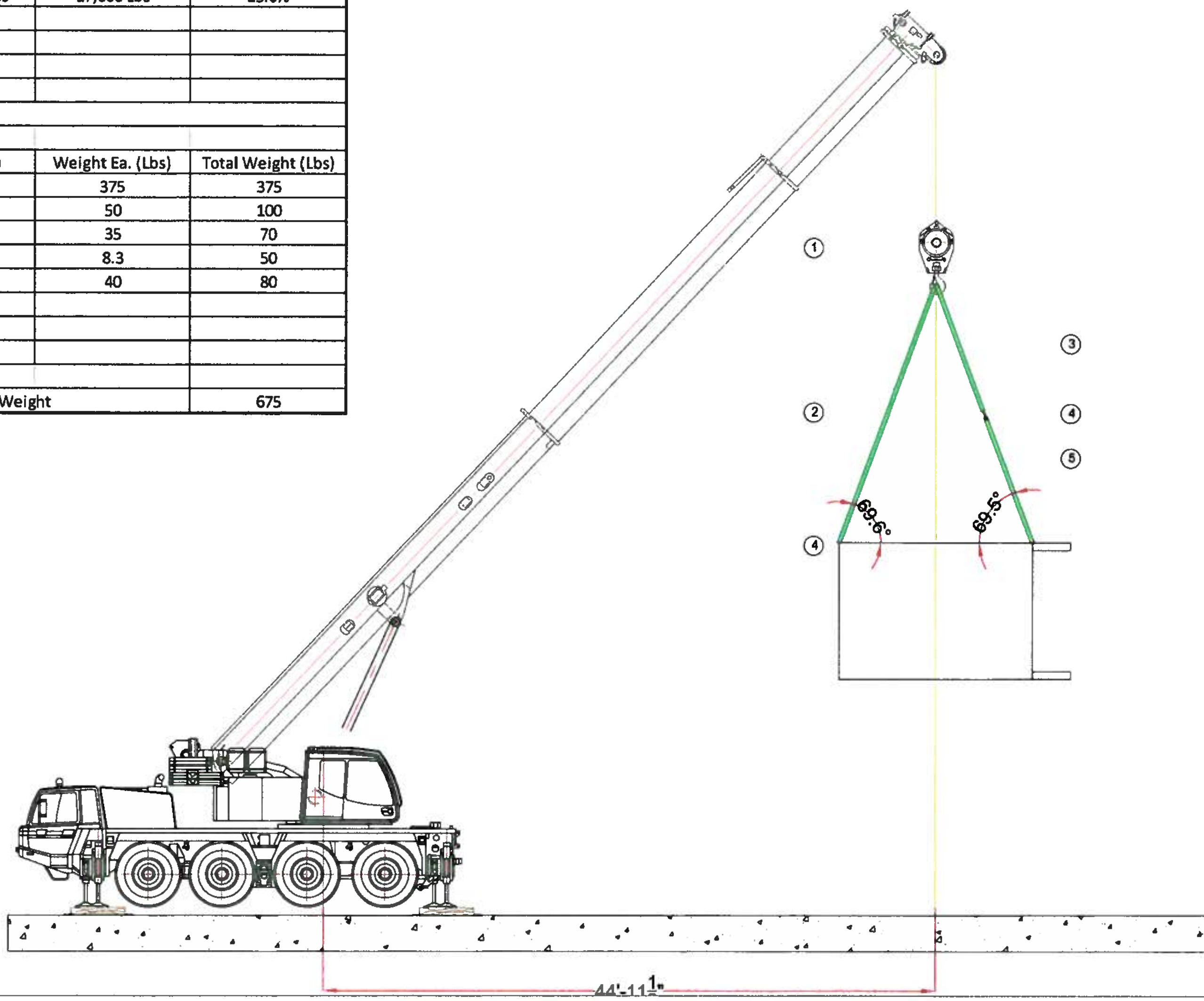


Cribbing Arrangement

4 x 4" x 6" x 4' Hardwood Blocks
4' x 5' x 1" Steel Plates (Minimum)

Total Bearing Area:	20 ft²
Max. Outrigger Load:	65,000 Lbs
Average Load to Ground:	3,250 lb/ft²
Allowable*:	4,000 lb/ft²

Ground load is 81% of allowable
*Assumed



Rev.	Description	Drawn	Date	Appr.
0	Issued for Comment & Review	PS	03/22/12	
1	Addition of Component Analysis	PS	03/28/12	
2	O.R Loads and Detail Added	PS	03/29/12	

CLIENT: NAVFAC
LOCATION: Aqua Water
PROJECT: G.A.C. Filters
Print Size: TABLOID (11x17)
Scale: As Shown

TITLE: Rigging Tackle Arrangement for the Installation G.A.C. units

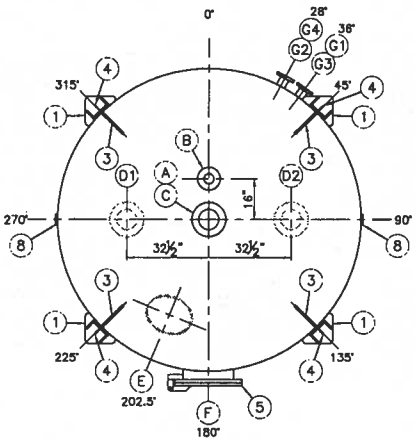
Ref: E-032212
Drawing No.: 032212-100-001-2
SHEET: 1 of 1

7. Calgon Carbon Vessel Information

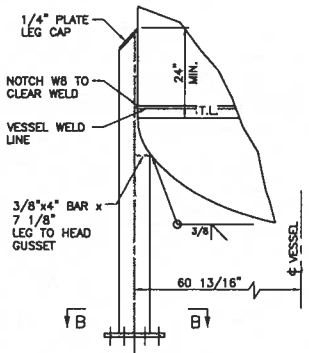
7.1. Vessel Arrangement Drawing

7.2. Scope for Installation Contractor

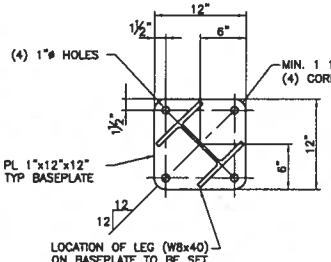
7.3. Support Legs and Lifting Lugs Calculations



PLAN

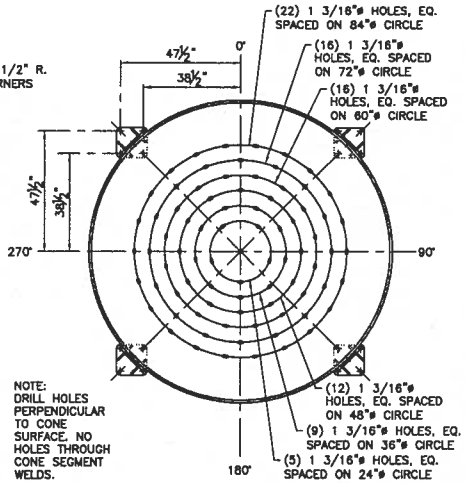


DETAIL (1)
VESSEL SUPPORT LEGS (4 REQ'D)
SCALE: 3/4"=1'-0"



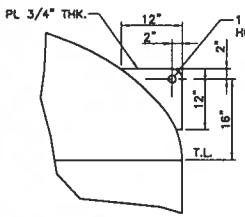
LOCATION OF LEG (W8x40) ON BASEPLATE TO BE SET BY DIMENSIONS FROM ℄ OF VESSEL. AFTER LEGS ARE WELDED TO SHELL. SEE SECTION A-A

SECTION B-B
SCALE: 1 1/2"=1'-0"

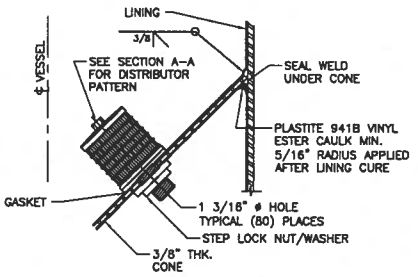


NOTE:
DRILL HOLES PERPENDICULAR TO CONE SURFACE. NO HOLES THROUGH CONE SEGMENT WELDS.

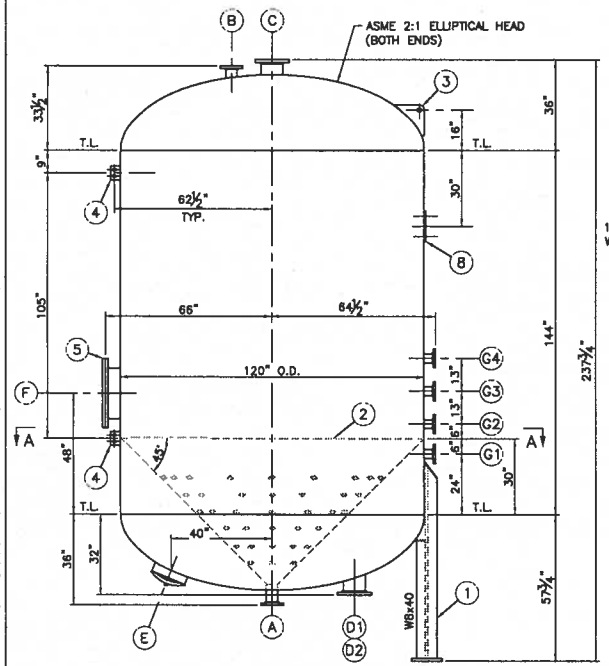
SECTION A-A



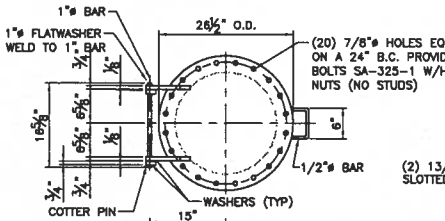
DETAIL (3)
LIFTING LUGS (4 REQ'D)
SCALE: 1"=1'-0"

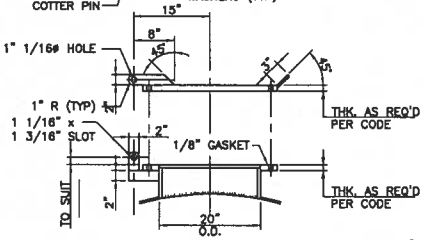


DETAIL (2)
SCALE: 3"=1'-0"

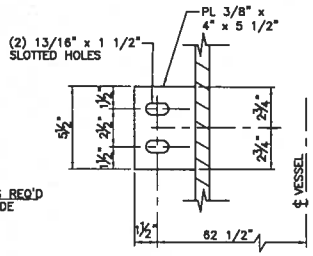


ELEVATION

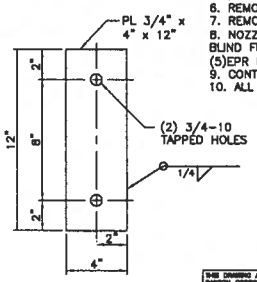




DETAIL (5)
20" MANWAY
SCALE: 1"=1'-0"



DETAIL (4)
PIPE SUPPORT CLIPS (8 REQ'D)
[30" ABOVE BOT. T.L, 9" BELOW TOP T.L] AT 45°, 135°, 225° AND 315°
SCALE: 3"=1'-0"



DETAIL (8)
PIPE SUPPORT (2 REQ'D)
SCALE: 3"=1'-0"

VESSEL DESCRIPTION	ADSORBER T-1, T-2 & T-3				
REFERENCES	VESSEL SPECIFICATION 7209A-VS1				
DESIGN CONDITIONS	125 PSIG @ 140° F				
OPERATING CONDITIONS	100 PSIG @ 100° F				
WALL THICKNESS	PER CODE REQUIREMENTS				
MATERIALS OF CONSTRUCTION	SHELL	SA-516-70			
	TOP HEAD	SA-516-70			
	BOT. HEAD	SA-516-70			
	NOZZLES	SA-106 GR. B			
	FLANGES	SA-105 (O.N.O.)			
	LINING ABOVE CONE	PLASITE 4110 35-45 MIL NOMINAL DFT PIN HOLE FREE FOR IMMERSION SERVICE			
	LINING BELOW CONE	PLASITE 4110 10-15 MIL NOMINAL DFT			
	SEALANT	PLASITE 941B VINYLESTER CAULK			
	SUPPORTS	A-992			
	BOLTING	SA-325-1 WITH HEAVY HEX NUT - SEE NOTE 4			
	GASKETS	1/8" EPR (45-55 DUROMETER) [1/4"TK. ELLIP]			
TYPE CONSTRUCTION	FUSION WELDED				
CORROS. ALLOW	NONE				
CODE	ASME SECTION VIII, DIVISION 1, 2001 ED., 2002 ADDENDUM				
INSPECTION	BY CALGON & CODE AGENCY				
STAMPING	ASME "U", NBR				
TESTING	HYDROSTATIC PER CODE				
STRESS RELIEF	PER CODE				
RADIOGRAPH	PER CODE AND CALGON CALCULATIONS				
NAMEPLATE	ASME				
STENCILS	LINED TANK: DO NOT WELD OR BURN				
SEISMIC LOAD	ZONE 4 I=1.0				
INSULATION	NONE - SEE NOTE 9				
SURFACE PREP	BRUSH BLAST PER SSPC-SPC7				
PAINTING	5-7 MILS DFT, CARBOLINE EPOXY 890 COLOR: #0908 (O'BRIEN SAND)				
LOCATION					
CAPACITIES	FULL	9,020 GAL.			
	OPERATING	9,020 GAL.	AT 100 % FILL		
	MEDIA	20,000 LBS.	(750 CU.FT.)		
PRODUCT S. G.	GR. 1.2				
WEIGHTS	EMPTY	16,500	LBS.		
	FULL H_2O	91,800	LBS.		
	FULL PRODUCT	36,500	LBS.		
	OPERATING	106,800	LBS.		

NOZZLE SCHEDULE

MARK	REQ'D	SIZE	DRILLING	FACING	DESCRIPTION
G	4	2"	150#	F.F.	SAMPLE POINT & VENT- SEE NOTE 8
F	1	20"		F.F.	MANWAY (BLIND GSKT.)
E	1	14"x18"	ELLIP.	F.F.	MANWAY WITH 1/4" TK. GASKET
D	2	8"	150#	F.F.	EFFLUENT - SEE NOTE 8
C	1	8"	150#	F.F.	INFLUENT
B	1	4"	150#	F.F.	CARBON INLET/VENT
A	1	4"	150#	F.F.	CARBON OUTLET SCH. 160 PIPE

NOTES:
1. ALL INTERIOR WELDS & EDGES TO BE GROUND TO 1/8" MIN.
2. ALL NOZZLES MUST BE FLUSH ON INSIDE OF SHELL, U.O.N
3. DETAIL 2, SECTION A-A, FIELD INSTALLED.
4. ALL NUTS & BOLTS TO BE ZINC PLATED.
5. 20" MANWAY FLG. TO BE SECURED WITH (2) BOLTS. REMAINDER OF BOLTS & NUTS TO BE PACKAGED AND SHIPPED IN THE CRATE.
6. REMOVE ALL WATER & DIRT AFTER HYDRO.
7. REMOVE ALL WELD SPATTER.
8. NOZZ. G2, G3, G4 & (1) NOZZ. D TO INCLUDE ASTM A105 150 LB. BLIND FLANGE, BOLTS, NUTS AND BLIND FLANGE GASKET INSTALLED,TOTAL (5)EPR BLIND GASKETS REQ'D INCLUDING MANWAY GASKET
9. CONTACT CCC FOR HEAT TRACE REQUIREMENTS.
10. ALL FLANGE BOLT HOLES TO STRADDLE CENTERLINES.

REV	DESCRIPTION	APP	DATE
	REVISIONS		
A	ISSUED FOR APPROVAL		

TOLERANCES (unless otherwise specified)
ANGULAR ±0°30' DECIMAL (2 PLACES) ±.010
FRACTIONAL ±1/16" DECIMAL (3 PLACES) ±.005
DECIMAL (1 PLACE) ±.015 DECIMAL (4 PLACES) ±.0005

	NAME	DATE
DRAFTER	JFS	1/13/12
DESIGNER		
CHECKER		
APPROVAL		

PROJECT No. LM-12024.AQNY

CalgonCarbon

CLIENT: AGVIQ, LLC
NASSAU COUNTY, NY

TITLE: CARBON ADSORBER SYSTEM
10' DIA., 125 PSIG
VESSEL ARRANGEMENT

DWG. Size D | SHEET No. 1 OF 1 | SCALE NONE

DWG. No. 91126634 | REV. A

W:\2012\LM-12024.AQNY\Drawings\Equipment\91126634 - Vessel.dwg Feb 14, 2012 - 1:10pm

SCOPE FOR INSTALLATION CONTRACTOR

GENERAL INSTRUCTIONS

1. Receive Carbon Adsorption Equipment in accordance with plant site requirements. One single drop truck is used to ship the equipment. Shipment is normally comprised of the following items:

   (2) Carbon Adsorber Vessels; 10 Ft. dia. x 20 Ft. overall length, Weight — 16,500 to 18,000 lbs each. Refer to Project Specific Drawings for exact Vessel dimensions and weights.

   (1) Valve Rack; Weight — 4,000 lbs.

   (12) Prefabricated pipe spools.

   (1) Crate of hardware; Containing bolts, gaskets, pipe supports and u-bolts, gages etc.

   Refer to Project drawings and material lists for a comprehensive account of components provided for the particular job being installed.

2. Off load the equipment from truck to the pre-prepared mounting location. Set equipment on properly formulated foundation ensuring weight loading, anchor bolt depth, smooth level surface and adequate dimension for equipment footprint. Recommended lifting procedures for unloading and hoisting equipment into position are described in this document in section titled Lifting & Handling Guidelines.

3. Set one Vessel in proper location on the foundation and position Valve Rack at the estimated point of hook-up. The vessels are the same configuration and it will not matter which is set first. Make sure that Vessel and Valve Rack are set true and level to plan. Align the 8" nozzle on the bottom head, Effluent pipe, and rubber expansion Joint with the appropriate Valve Rack connection. Bolt-up snug when alignment is satisfactory. Align the 8" Influent piping to the designated valve rack connection and connect expansion joint piping with tank nozzle on the top of the vessel, and bolt-up snuggly. Add in all pipe bracket supports and u-bolts as provided. When it is determined that complete line up is acceptable finish bolting both Effluent and Influent lines. Proceed to line up second Vessel with Valve Rack and Effluent/Influent piping as previously described and when accomplished finish the bolt-up. When completely satisfied with installation bolt Vessels to foundation using predetermined anchor bolt hardware. In addition connect (1) 4" carbon fill, and (1) 4" carbon discharge line to each Vessel. All of this activity will allow for the complete utilization of one day crane time. Refer to Model 10 Installation drawing for generalized details and the Project drawings for more specific details.

4. Customer Supplied material is all main pipe lines, supports and hardware for; Raw Water Supply, Treated Water Return, Backwash Supply and Return all of which is to be connected to Model 10 Valve Rack for service. Also, Customer provides 4" vent line in which a relief valve or rupture disk (safety relief item furnished by CCC) is mounted. Route the vent line to safe location above Grade Level.

6. When applicable, install the vessel sample ports and connecting hardware as detailed on the Project drawings. Also mount instrument gages shown on Project drawings as required.

7. Each Vessel has underdrain nozzles pre-installed by CCC. After the Calgon Carbon field representative inspects them the manway covers can be closed and secured.

LIFTING & HANDLING GUIDELINES

General Lifting Instructions

The recommended lift points on the Model 10 ; lifting lugs on vessel top head, vessel leg anchor base plates and location shown on the valve rack.

1. Always make lift attachments to the designated lift points when using chains or cables. Never lift using a vessel nozzle.
2. Operators of hoisting and moving equipment must follow proper rigging procedures at all times.
3. Always lift - **NEVER** roll or slide equipment.
4. When moving equipment, do not drop or allow hard impact. Do not allow cables, hooks, or spanner bars to swing against or slide over the Vessel.
5. Never allow tools to strike or drop on equipment (especially inside or outside of vessels).

General Handling Instructions

Normal precautions for avoiding equipment damage are as follows:

1. Never allow bare metal chains or cable to slide against the metal surface of equipment causing marring, deformation or serious defects in the metal.
2. Avoid temporarily bracing vessels or equipment with metal structures, wood is acceptable for this application. Avoid striking vessel with tools or instruments of any kind.
3. All ladders used inside vessels shall have ends protected. Ladders shall have rubber protectors to prevent damaging the lining.
4. Workmen entering a lined vessel must wear soft-soled shoes, free of grit.

Recommended Unloading & Placement Procedures

i. Vessel and miscellaneous equipment unloading shall be accomplished in such a manner as to avoid damage to finished surfaces. Adequate padding may be necessary around the lifting point. Wooden chalks and crating should be carefully removed where necessary.

ii. Utilize chains, nylon slings, or a spreader bar for hoisting vessels. The angle between the lifting point and the top of the equipment must always be 45° or greater. Workmen shall keep control over the vessel with tag lines. No metal rigging may come in contact with the vessel except for specifically designed lift points or lifting lugs.

iii. A crane is required to off-load, move and hoist into position the vessels and piping assemblies. Lift points are provided on all pieces. A properly trained and experienced rigging crew shall be employed to set the equipment. The equipment shall be set on a solid foundation, made level as possible and anchored as required by local codes and seismic regulations. Each vessel must be individually set.

iv. Piping connection points to vessels and valve rack shall be free of mechanical stress. Do not force pipe connections to these points for damage can result.

v. Follow safe anchor bolt installation practices.

vi. Dirt marks shall be cleaned from the surface of all Equipment upon completion of the installation. Marred paint resulting on Vessels and all equipment pieces shall be touched up with a paint of comparable color and quality. More severe damage requires appropriate surface cleaning and preparation before primer and finishing paint are applied.

Standard Model 10's

Equipment No.: PV-1 and PV-2
By: M. Antonetti
July, 2009

Adsorber - 10 ft. Diameter
Support Legs and Lifting Lugs - Calculations

Lifting Lugs

Vessel Empty Weight	W_e =	16,500	lb.	
Factor of Safety	F.S. =	3		
Lifting Lug Design Load	F =	24,750	lb.	
Direction of Applied Force from Vertical	α =	45	deg.	
Applied Lifting Force	F_a =	35,002	lb.	
Normal Force on Lug	P =	0	lb.	
Shear Force on Lug	V =	35,002	lb.	
Lifting Lug Material		SA-36		
Yield Strength	S_y =	36,000	psi	
Allowable Stress	S_a =	21,600	psi	per ASCI: 60% S_y
Lifting Lug Radius	R =	2	in.	
Diameter of Hole	D_h =	1 9/16	in.	
Required Plate Thickness	t_r =	0.665	in.	
Actual Plate Thickness	t_a =	3/4	in.	

PLATE THICKNESS IS ACCEPTABLE

Weld Length	d =	16	in.	
Normal Distance Shell to Applied Load	a =	5	in.	
Total Weld Length	A_w =	32	in.	
Section Modulus of Weld	Z_w =	85	in^2	$Z_w = d^2 / 3$
Normal Force on Weld	f_n =	0	lb./in.	
Shear Force on Weld	f_s =	1,094	lb./in.	
Bending Force on Weld	f_b =	2,051	lb./in.	
Allowable Stress of Base Metal	S_a =	20,000	psi	per ASME Section II, Part D for SA-516 Gr. 70
Fillet Weld Joint Efficiency	E =	0.45		
Allowable Unit Force for Fillet Weld	f_a =	9000	$lb./in^2$	
Required Weld Size	w =	0.258	in.	
Actual Weld Size		3/8	in.	

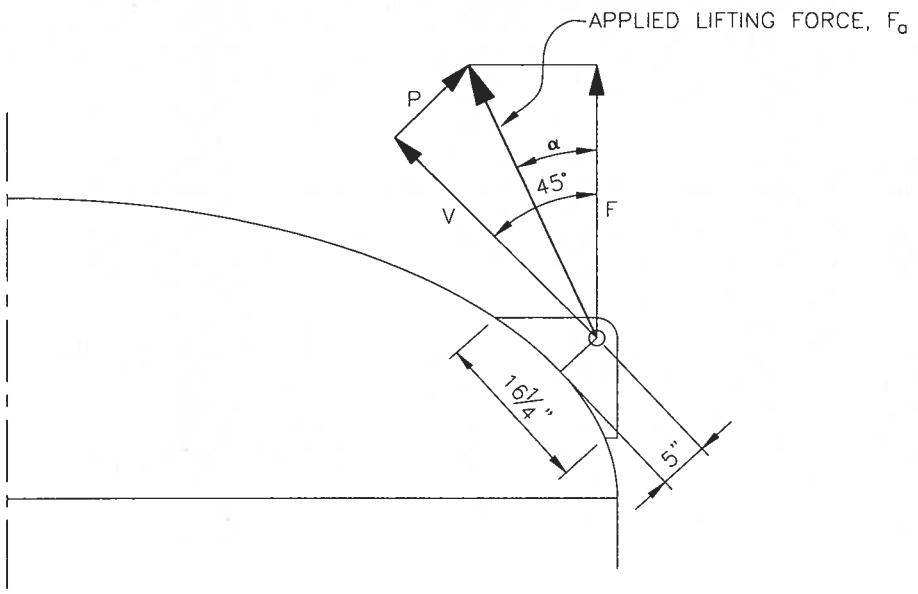
WELD SIZE IS ACCEPTABLE

Standard Model 10's

Equipment No.: PV-1 and PV-2
By: M. Antonetti
July, 2009

Adsorber - 10 ft. Diameter
Support Legs and Lifting Lugs - Calculations

Lifting Lug Diagram



$F_a = F / \cos \alpha$
$V = F_a \cos(45°-\alpha)$
$P = F_a \sin(45°-\alpha)$

8. Bay Crane – Crane Information and Load Charts

BAY CRANE

www.baycrane.com

75 ton

Tadano ATF-65G
Load Charts

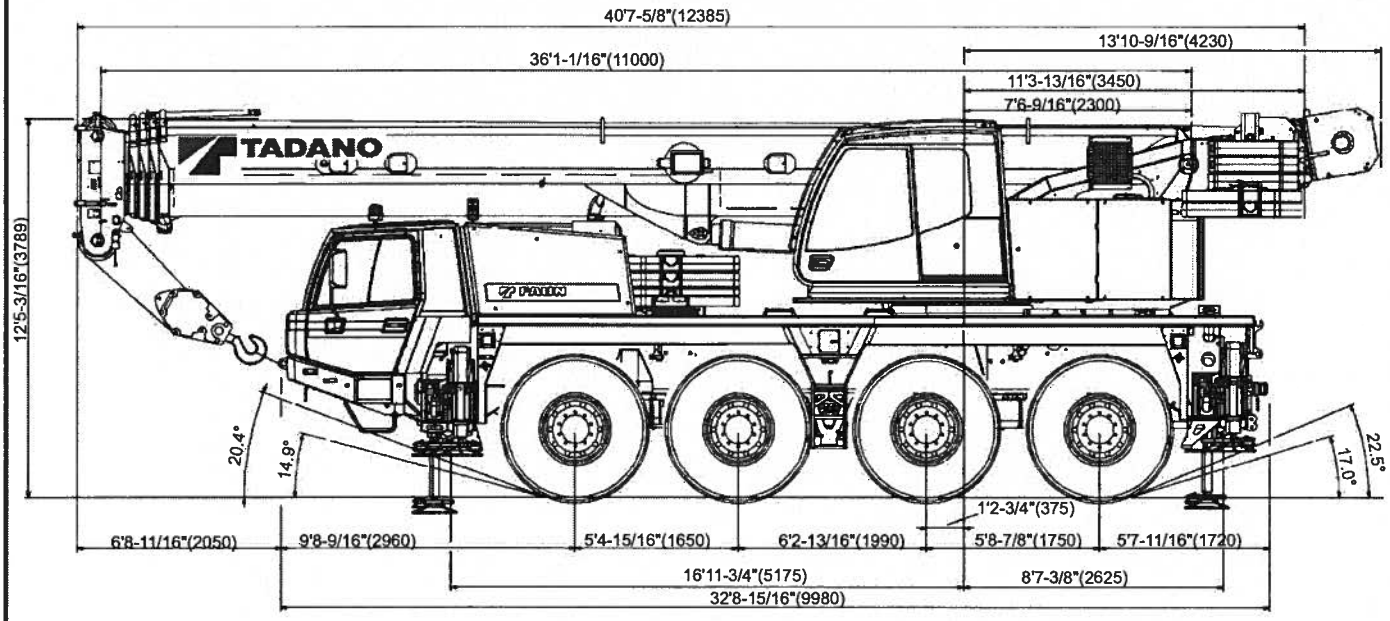
TADANO

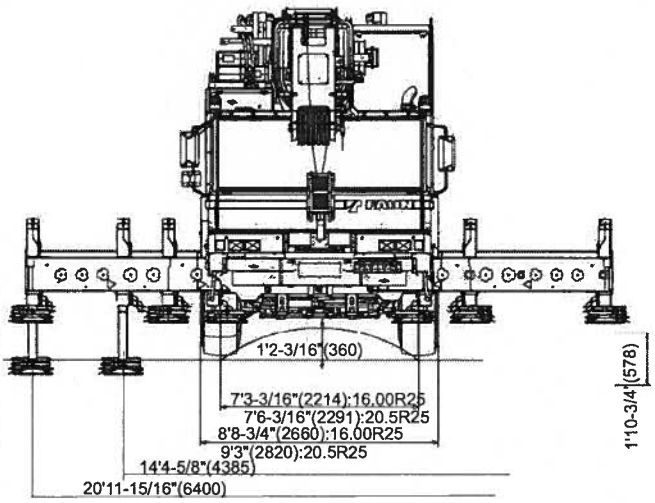
ATF65G-4

75 Ton Capacity (68.2 Metric Tons)

ALL TERRAIN CRANE

DIMENSIONS





TURNING RADIUS

Steering	Front wheel (8x6)	All wheel (8x8)
Carrier inside	16' 1-5/16" (4.91m)	11' 3-5/16" (3.437m)
Over carrier	32' 3-13/16" (9.85m)	27' 5-1/2" (8.37m)
Over boom	35' 5-3/16" (10.8m)	31' 3-9/16" (9.54m)
Over boom extension	37' 6" (11.43m)	33' 7/16" (10.07m)

Specifications are subject to change without notice.

1. CRANE CARRIER

1.1 FRAME
FAUN purpose built, 4 axle, box-type, torsion resistant, welded construction made of high tensile steel with integrated outrigger housings. Equipped with front and rear fenders, front and rear towing and tie-down lugs and front towing connections and access ladders.

1.2 OUTRIGGERS
Four point, fully hydraulic, horizontal and vertical motions controlled by electro-magnetic valves. Push button controls on both sides of the carrier with level gauges and controlled from superstructure cab. Vertical cylinders with integral holding valves. Large sized floats can be stored on vertical cylinders or on carrier for road travel.
Outrigger base: length 25' 7-1/16"(7.80m), width 20' 11-15/16"(6.4m)
Mid. extension 14' 5-1/4"(4.4m)

1.3 CARRIER ENGINE
Mercedes Benz 6 cylinder water-cooled diesel engine, model OM 501 LA (Euromoto 2/ EPA 2), with hydrostatically driven fan and thermostatically controlled cooler.
Displacement 729 in^3, Rating 394 hp at 1,800 rpm
Torque 1,364 ft-lbs at 1,080 rpm.

1.4 TRANSMISSION
ZF AS-Tronic 12AS2302 mechanical transmission with fully automatic gear shifting. 12 forward gears and 2 reverse gears.
Gear ratios Forward: 12.33 / 9.59 / 7.44 / 5.78 / 4.57 / 3.55 / 2.70 / 2.10 / 1.63 / 1.27 / 1.00 / 0.78
Reverse: 11.41 / 8.88

1.5 TRANSFER CASE
Two stage kessler transfer case is flang-mounted to 3rd axle.
Reduction ratios: on-road 1.03/ off-road 1.90

1.6 DRIVE
8×6 : for on-road: 3rd and 4th axles are driven
for off-road: 2nd, 3rd and 4th axles are driven
8x8(OPTIONAL): all axles are driven

1.7 AXLES
1st axle : steered, non-driven
streed, driven with transverse differential lock (OPTION)
reduction : 7.29
2nd axle steered, driven with transverse differential lock
reduction : 7.29
3rd axle : steered, driven with integrated transfer case
reduction : 7.29
with longitudinal and transverse differential locks
reduction : 1.030
4th axle : steered, driven with transverse differential lock
reduction : 7.29
All steering knuckle bearings designed for minimum maintenance (yearly inspection).

1.8 SUSPENSION
Hydro-pneumatic, lockable with level adjustment. All axles have longitudinal and transverse trailing arms. With leveling adjustment and locked cylinders, the chassis can be tilted laterally and longitudinally by push buttons in the carrier cab which adjust the stroke of each individual suspension cylinder. All bearings are designed for minimum maintenance (yearly inspection).
Cylinder stroke: ± 3-15/16" (100mm)

1.9 BRAKE SYSTEM
Service : Dual circuit compressed air system with ABS.
Parking : Spring loaded type, acting on 2nd, 3rd and 4th axles.
Auxiliary : Intarder,engine exhaust brake and constant throttle engine brake system.

1.10 WHEELS
(8) 11.00-25 steel disc wheels with (8) 16.00R25 on / off-road profile tires and mud flaps.

1.11 STEERING SYSTEM
ZF Servocom-dual circuit hydraulic steering, mechanical steering of front two axles with hydraulic booster and an emergency steering pump is flange-mounted to the transfer case.
Rear axles can also be steered electronically depending on the speed according to the steering angle of the front axles.
All bearings are designed for minimum maintenance (yearly inspection).
Hydro-static steering with electrical controls, 1st, 2nd and 4th axles by lever and rear two axles by lever for all-wheel, co-coordinated and crab steer from the superstructure.

1.12 POWER TRAIN
Drive-shafts with cross-geared flanges designed for minimum maintenance.

1.13 FUEL TANK CAPACITY
87 gal(330 l) filler cap lockable by One-key system.

1.14 CARRIER CAB
Two man full width cab of composite structure (steel sheet metal and fiber glass), windshield of laminated safety glass with windshield wiper and washer, sliding side windows of hardened glass. Driver and co-driver seats adjustable and air-suspended with integrated 3 point safety belts and headrests. 2 rear-view mirrors (electrically adjustable), 1 wide angle mirror and additional curb mirror, all mirrors heated, Radio with CD player and connections for wireless.
Engine dependent warm-water heater with defroster nozzles for windshield and cab floor.
Instrumentation includes speedometer, odometer, tachograph, rpm counter with hour meter, fuel level gauge, engine warning display for engine temperature, malfunction and diagnosis via the transmission display.
Control panel for electronic rear axle steering.
Air conditioner(OPTIONAL)

1.15 ELECTRICAL SYSTEM
24 volt DC system with 80 ampere 3-phase generator, and 2 batteries each 12 volt 170 Ah.
Front lighting includes 2 low beam head lights, 2 high beam head lights, 2 directional indicators.
Rear lighting includes 2 rear combi panels each with directional indicator, brake light, fog light, reversing light and license plate light.
Side lighting includes 2 front directional indicators and reflectors on carrier.
Other equipment includes hazard warning lights, cab light, instrument panel light, signal horn and amber rotating beacon on cab roof and 4 working lights for outrigger extension area.
Lighting according to EEC regulations.

1.16 TOOLS AND ACCESSORIES
Special tool set, hazard warning light, hazard warning triangle, fire extinguisher and first aid kit.

1.17 PAINTING
Standard TADANO colors

1.18 DIMENSIONS

Overall width : 8' 8-3/4"(2.66m) with 16.00R25 tires
9' 3"(2.82m) with 20.5R25 tires(OPTIONAL)
Overall height : 12' 5-3/16"(3.79m) with 16.00/20.5R25 tires
In travel condition, the overall height can be adjusted ± 3-7/8"(100mm).
Overall length : 40' 7-5/8"(12.38m)
Carrier length : 32' 8-7/8"(9.98m)
Wheel base : 5' 4-15/16" + 6' 2-13/16" + 5' 8-7/8"
(1.65m + 1.9m + 1.75m)
Track: 7' 3-3/16"(2.214m) with 16.00R25 tires
7' 6-1/4"(2.291m) with 20.5R25 tires(OPTIONAL)

1.19 TRAVEL PERFORMANCE (according to DIN 70020)

Max. travel speed : 52.8 mph
Min. travel speed at 800 rpm : 0.6 mph with the clutch closed
Max. gradeability : 65 %

Tires 16.00/20.5R25, Total GVW 105,820 lbs				
Gear	Travel speeds (mph) * max. engine revs		Gradeability (%)	
	off-road	on-road	off-road	on-road
1st	1.9	3.7	65	30
2nd	2.5	5.0	65	30
3rd	3.1	6.2	53	26
4th	4.3	8.1	39	19
5th	5.6	9.9	29	15
6th	6.8	12.4	22	11
7th	9.3	16.8	16	8
8th	11.8	21.1	12	6
9th	14.9	27.3	9	4
10th	19.3	35.4	7	3
11th	24.2	44.7	5	2
12th	31.1	52.8	4	1
1st reverse	1.9	3.7	59	28
2nd reverse	2.5	5.0	59	28

The gradeability is based on theoretical values and depends on ground conditions and the coefficient of friction.

1.20 CARRIER OPTIONAL EQUIPMENT

1. 8 x8 drive
2. Rear towing hook
3. Towing coupling (D value 100 kN) with light and brake connection
4. 14.00R25 on/off road profile tires-overall width 8' 4-3/8"(2.55m)
5. 20.5R25 on/off road profile tires-overall width 9' 3'(2.82m)
6. Spare wheel and tire
7. Spare wheel bracket (not in combination with tool box)
8. Rear tool box (not in combination with spare wheel bracket)
9. Spark arrester
10. Central lubricating system
11. Air conditioning
12. Front fog lights
13. Reversing video camera
14. Additional hot water heater with engine pre-heat and window defroster (Webasto Thermo 90S)
15. Additional hot air cab heater (Webasto Airtop 3500)
16. Tool box at rear

2. SUPERSTRUCTURE

2.1 SUPERSTRUCTURE FRAME

Torsion - resistant, all-welded structure of high tensile steel. Connected to carrier by single-row ball bearing slewing ring with external gearing providing 360°continuous rotation.

2. 2 CRANE ENGINE

Mercedes Benz 4 cylinder water-cooled diesel engine, model OM 904 LA(EUROMOT 2A/EPA 2) with step-less control of engine rpm by foot pedal.
Displacement 259 in^3, Rating 122 hp at 2,300 rpm
Torque 347 ft-lbs at I,200 rpm
Fuel tank capacity : 52.8 gal(200 l)

2. 3 HYDRAULIC SYSTEM

Three circuit diesel hydraulic system with 1 double axial piston variable displacement (hydraulically controlled) with cumulative control for telescoping, derricking and hoisting and 1 double gear pump for slewing and pilot controls.

2.4 HYDRAULIC CONTROLS

2 joy-stick levers with 4 three-way electrically operated valves for independent simultaneous operation of all crane motions with infinite speed control.

2.5 TELESCOPIC BOOM

Five section box type construction of high tensile steel, consisting of 1 base section and 4 telescopic sections.
The boom is extended by means of 1 double acting single stage hydraulic cylinder.
All boom telescope sections can be extended and retracted fully automatically and locked in the selected working position.
All telescope sections extendable under partial load.
Total retracted length : 36' 1-1/16"(11.0m)
Total extended length : 144' 4-5/16"(44.0m)
Max. sheave height : 154' 2-3/8"(47.0M)
Telescoping speed out : 230 sec.

2.6 TELESCOPIC BOOM EXTENSION

Double folding,swinng around lattice type boom extension 29.5 ft(9.0M) - 52.5 ft(16.0m) long, offset 0°/20°/40°.
Equipped with anti-two block system.

2.7 AUXILIARY LIFTING SHEAVE (SINGLE TOP) - OPTIONAL

Single sheave mounted to main boom head for single line operation (stowable). Equipped with anti-two block system .

2.8 BOOM HOIST

1 double acting hydraulic cylinder with integral holding valve.
Boom elevation : -2° to +82°
Boom elevation speed : 66 sec. normal speed /
33 sec. high speed (only derricking up)

2.9 MAIN WINCH

Axial piston constant displacement motor, grooved hoist drum, integral planetary gear, automatic hydraulically controlled spring-loaded multiple disc brake and integral free wheeling (no sagging of load by hoisting).
Winch drive assembly connected to open hydraulic system.
Wire rope with "Superstop" easy reeving system.
Lower limit switch and drum turn indicator.

Drum diameter :	15.75"(400 mm)
Rope diameter :	0.63'(16 mm)
Rope length :	557.7'(170 m)
Max. line pull 1st layer :	11,690 lbf (52 kN)
Max. line speed 4th layer :	normal 213 ft/min / high 426 ft/min

2.10 AUXILIARY WINCH - OPTIONAL

Axial piston constant displacement motor, grooved hoist drum, integral planetary gear, automatic hydraulically controlled spring-loaded multiple disc brake and integral free wheeling (no sagging of load by hoisting). Winch drive assembly connected to open hydraulic system. Wire rope with "Superstop" easy reeving system. Lower limit switch and drum turn indicator.

Drum diameter :	15.75"(400 mm)
Rope diameter :	0.63"(16 mm)
Rope length :	557.7'(170 m)
Max. line pull 1st layer :	11,690 lbf (52 kN)
Max. line speed 4th layer :	normal 213 ft/min / high 426 ft/min

2.11 SLEWING GEAR

Constant displacement motor with two-stage planetary gear, a foot actuated service brake and a parking brake.
Slewing speed infinitely variable: 0 - 2.0 rpm

2.12 COUNTERWEIGHT

Total 33,070 lb divisible,assembled and disassembled by hydraulic cylinders controlled from crane cab.
Tail swing : 11.32' (3.45m)
13.93' (4.245m) with Aux.wimch (OPTIONAL)

2.13 SUPERSTRUCTURE CAB

Spacious and ergonomic panoramic cab with sliding door and extra-large tinted glass windows, electrically controlled folding-out front window with windshield washer and wiper, fixed cab roof window with armoured glass and folding out rear cab window, sun visor, cab light, tiltable cockpit with adjustable hydraulically cushioned seat with headrest, signal horn, radio with CD player, and connection for wireless (12 volt).
Engine-independent(hot water) heater with defroster nozzles for windshield and cab floor((Webasto Thermo 50).
Ergonomically positioned control elements and instrumentation for crane operation including fuel level gauge, engine cooling water temperature, hour meter and combined engine warning lamp.
Travel controls for steering and driving in 1st forward and reverse gear only.
Outrigger controls and level from superstructure cab.
One-key system for the both carrier and crane cabs.
Air conditioner(OPTIONAL)

2.14 ELECTRICAL SYSTEM

24 volt system with 80 A 3-phase alternator, 2 batteries each 12 V and 110 Ah, 1 rotating beacon on right-hand side of main winch, 2 working lights on cab front flap, 1 working light on boom base section and 2 side lights on boom head.

2.15 SAFETY DEVICES

Electronic load moment device (AML) with interpolation and automatic overload shut-off, hoist limit switch with shut-off, overload warning and load moment gauge. Digital display of boom angle, boom length, sheave height, working radius, hook load and further information.
Working area limitation for boom angle, sheave height and working radius with automatic shut-off.
Automatic speed reduction when approching overload condition.
Safety valves against pipe and hose rupture, holding valves on hydraulic cylinders.

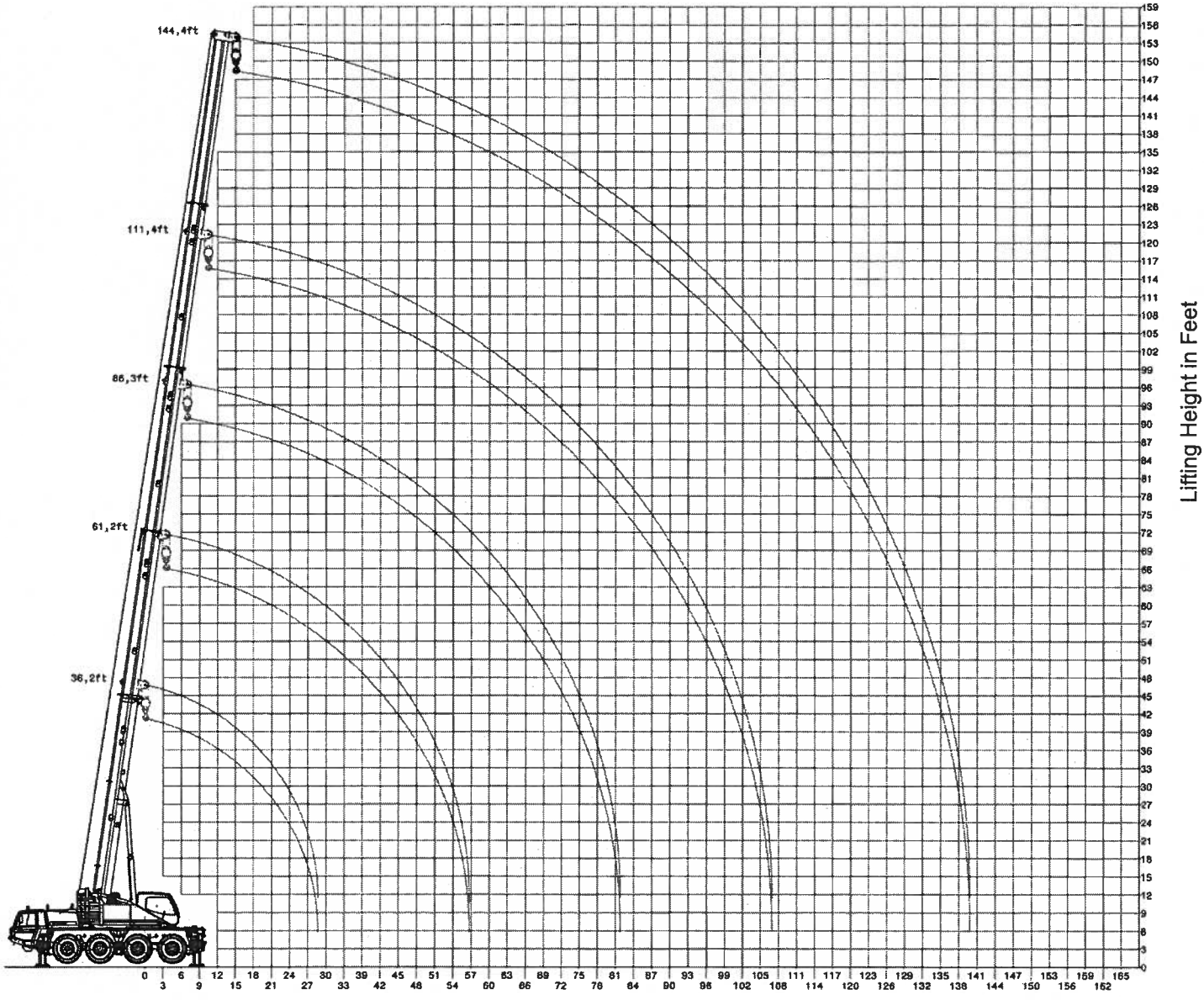
2.16 SUPERSTRUCTURE EQUIPMENT

6.6 ton headache ball
35 ton hook block, 3 sheaves, single horn hook

2.17 SUPERSTRUCTURE OPTIONAL EQUIPMENT

1. Air conditioning
2. 13.8 ton single sheave Hook Block
3. Heavy-duty 5.2'(1.6m) short jib
4. Auxiliary winch with 0.63"(16mm) cable
5. Auxiliary lifting sheeve (Single Top)
6. Central lubricating system
7. Slewing area limitation with shut-off
8. Lift adjuster
9. Aircraft warning light
10. Additional oil cooler
11. Spark arrester
12. 360° positive swing lock for NYC
13. Additional independent heater (Webasto Thermo 90S)

ATF65G-4 WORKING RANGE CHART



NOTE: Boom and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

ATF65G-4 TADANO-Load rating chart

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.06 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			48.6		48.6		48.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	* L	1)		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		
8	69	150.0*																											8
9	68	133.4*																											9
10	66	122.1	119.7	73	109.6	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7										10
12	62	110.4	106.8	69	101.1	69	70.5	69	65.8	75	88.2	75	75.4	75	70.5	75	69.9	75	47.5	78	69.9	78	77.1	78	70.5	78	70.5	78	49.7	12
14	58	99.9	95.6	67	92.0	67	70.5	67	61.5	73	86.8	73	69.7	73	70.5	73	66.1	73	44.0	76	65.0	76	74.9	76	70.5	76	69.7	76	45.9	14
16	54	88.3	85.4	64	84.4	64	70.5	64	57.8	70	81.2	70	64.7	70	70.5	70	61.5	70	40.9	74	60.8	74	70.5	74	70.5	74	66.5	74	42.5	16
18	50	78.3	76.9	62	76.6	62	70.5	62	54.6	69	74.8	69	60.5	69	69.3	69	57.6	69	38.3	73	56.6	73	66.4	73	69.7	73	62.6	73	39.8	18
20	45	69.3	69.1	59	68.6	59	69.5	59	51.6	67	68.4	67	56.6	67	67.2	67	54.0	67	35.8	72	52.8	72	62.5	72	67.9	72	58.8	72	37.3	20
25	30	54.2	54.2	52	54.0	52	54.9	52	45.8	61	53.7	61	49.1	61	55.0	61	47.0	61	31.1	67	45.3	67	53.3	67	54.5	67	50.9	67	32.2	25
30				43	43.8	43	44.5	43	41.3	55	43.3	55	43.0	55	44.7	55	41.5	55	27.5	63	39.4	63	43.6	63	44.2	63	44.8	63	28.3	30
35				33	37.0	33	38.1	33	37.9	49	36.6	49	36.9	49	38.1	49	37.3	49	24.6	58	34.3	58	36.9	58	37.5	58	39.2	58	25.3	35
40				17	30.4	17	31.3	17	32.0	42	30.0	42	30.4	42	31.7	42	33.1	42	22.3	53	29.5	53	30.4	53	31.1	53	32.8	53	22.9	40
45										34	25.0	34	25.2	34	26.4	34	27.7	34	20.4	48	24.2	48	25.2	48	25.9	48	27.5	48	20.9	45
50										21	21.2	21	21.4	21	22.3	21	23.7	21	19.0	41	20.3	41	21.4	41	21.9	41	23.4	41	19.1	50
55																				35	17.1	35	18.2	35	18.7	35	20.3	35	17.7	55
60																				26	14.4	26	15.5	26	16.1	26	17.7	26	16.6	60
65																				12	12.4	12	13.3	12	13.9	12	15.5	12	15.6	65
70																													70
75																													75
80																													80
85																													85
90																													90
95																													95
100																													100
110																													110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	0			0		0		0		46		0		0		0		93		46		46		0		0			Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		46		93		46		46		0			Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		46		46		46			Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93	Tel. 4

1) Over rear with superstructure pin engaged.
* With additional equipment.

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			48.6		48.6		48.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	* L			* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		* L		
8	69		123.8																										8
9	68		115.4																										9
10	66		107.2	73	106.9	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7										10
12	62		94.0	69	93.8	69	70.5	69	65.8	75	87.8	75	75.4	75	70.5	75	69.9	75	47.5	78	69.9	78	77.1	78	70.5	78	70.5	78	49.7	12
14	58		83.3	67	83.2	67	70.5	67	61.5	73	82.8	73	69.7	73	70.5	73	66.1	73	44.0	76	65.0	76	74.9	76	70.5	76	69.7	76	45.9	14
16	54		74.3	64	74.1	64	70.5	64	57.8	70	72.0	70	64.7	70	70.5	70	61.5	70	40.9	74	60.6	74	67.2	74	67.2	74	66.5	74	42.5	16
18	50		66.6	62	66.2	62	65.9	62	54.6	69	62.6	69	59.7	69	64.1	69	57.6	69	38.3	73	55.3	73	58.9	73	59.7	73	60.7	73	39.8	18
20	45		59.1	59	58.5	59	59.8	59	51.6	67	54.1	67	54.6	67	56.3	67	53.9	67	35.8	72	49.8	72	51.4	72	52.0	72	54.4	72	37.3	20
25	30		41.0	52	40.6	52	42.0	52	42.4	61	39.8	61	40.1	61	41.6	61	43.2	61	31.1	67	37.3	67	38.8	67	39.4	67	41.6	67	32.2	25
30				43	29.7	43	30.8	43	31.5	55	29.3	55	29.5	55	31.0	55	32.3	55	27.5	63	28.4	63	29.7	63	30.4	63	32.1	63	28.3	30
35				33	22.9	33	24.0	33	24.7	49	22.4	49	22.7	49	24.0	49	25.3	49	24.6	58	21.7	58	22.8	58	23.4	58	25.1	58	25.3	35
40				17	18.2	17	19.0	17	19.7	42	17.7	42	18.1	42	19.2	42	20.5	42	20.5	53	17.0	53	18.1	53	18.7	53	20.3	53	21.4	40
45										34	14.3	34	14.5	34	15.8	34	17.0	34	17.0	48	13.6	48	14.5	48	15.2	48	16.8	48	17.9	45
50										21	11.8	21	12.0	21	13.2	21	14.3	21	14.4	41	11.0	41	12.0	41	12.5	41	14.0	41	15.1	50
55																				35	8.9	35	9.9	35	10.3	35	11.9	35	13.0	55
60																				26	7.2	26	8.1	26	8.6	26	10.1	26	11.2	60
65																				12	5.7	12	6.6	12	7.2	12	8.8	12	9.7	65
70																													70
75																													75
80																													80
85																													85
90																													90
95																													95
100																													100
110																													110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	0			0		0		0		46		0		0		0		93		46		46		0		0			Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		46		93		46		46		0			Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		46		46		46			Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93	Tel. 4

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	66.1	78	40.6																					14
16	77	54.3	77	54.8	77	66.1	77	37.6	79	49.2	79	49.6	79	38.7															16
18	76	50.9	76	51.3	76	64.4	76	35.1	76	46.2	76	46.7	76	36.9	80	40.4	80	35.4	80	32.0									18
20	75	47.6	75	48.1	75	62.1	75	32.6	77	43.5	77	43.9	77	35.0	79	38.6	79	35.0	79	31.7	80	30.9	80	27.6					20
25	71	41.0	71	41.4	71	54.0	71	28.3	74	37.7	74	38.3	74	30.5	76	34.8	79	31.6	76	28.2	78	30.9	76	27.6	79	22.9	80	20.3	25
30	68	35.7	68	36.2	68	44.9	68	24.7	71	33.1	71	33.6	71	26.9	74	30.8	74	28.6	74	25.3	76	28.6	76	25.8	78	22.9	79	20.3	30
35	64	31.5	64	32.0	64	38.4	64	22.0	68	29.4	68	29.9	68	24.2	71	27.6	71	25.9	71	22.8	74	25.7	74	23.4	76	22.9	76	20.3	35
40	60	27.8	60	28.2	60	32.0	60	19.8	65	26.3	65	26.8	65	21.8	69	24.8	69	23.6	69	20.7	72	23.3	72	21.6	74	21.6	75	19.8	40
45	56	24.2	56	24.7	56	28.8	56	18.0	62	23.5	62	24.3	62	20.0	66	22.5	66	21.5	66	18.9	69	21.1	69	19.9	71	19.9	72	17.6	45
50	51	20.7	51	21.2	51	22.8	51	16.4	58	20.6	58	21.5	58	18.4	63	20.4	63	19.9	63	17.3	66	19.4	66	18.4	69	18.3	71	15.8	50
55	46	17.5	46	18.0	46	19.6	46	15.1	54	17.9	54	18.6	54	17.0	59	18.3	59	18.4	59	15.9	63	17.8	63	17.0	67	16.7	69	14.3	55
60	41	14.8	41	15.2	41	17.0	41	13.9	50	15.5	50	16.3	50	15.7	56	16.2	56	16.9	56	14.6	60	16.2	60	15.9	65	15.5	67	13.0	60
65	36	12.6	36	13.1	36	14.6	36	12.9	46	13.3	46	14.2	46	14.7	52	14.1	52	15.6	52	13.6	57	14.3	57	14.7	62	14.5	64	11.8	65
70	28	10.7	28	11.2	28	13.0	28	12.2	41	11.4	41	12.4	41	13.8	49	12.4	49	14.0	49	12.6	55	12.8	55	13.5	59	13.0	62	10.8	70
75	21	8.9	21	9.3	21	11.5	21	11.5	36	9.9	36	10.8	36	12.8	45	10.8	45	12.4	45	11.7	52	11.3	52	12.2	57	11.6	59	9.9	75
80									30	8.7	30	9.4	30	11.6	41	9.4	41	11.0	41	11.0	49	9.8	49	10.9	54	10.3	56	9.0	80
85									23	7.4	23	8.0	23	10.4	36	8.2	36	10.0	36	10.0	45	8.7	45	9.8	51	9.3	54	8.2	85
90															32	7.2	32	9.0	32	9.1	41	7.7	41	8.9	46	8.2	51	7.7	90
95															28	6.3	28	8.1	28	8.2	37	6.7	37	8.0	45	7.3	49	7.1	95
100															19	5.5	19	7.2	19	7.2	33	5.9	33	7.1	42	6.6	46	6.4	100
110																					21	4.6	21	5.7	34	5.1	39	5.1	110
120																									23	3.9	31	3.9	120
130																											21	3.1	130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	66.1	78	40.6																					14
16	77	54.3	77	54.8	77	64.0	77	37.6	78	49.2	79	49.6	79	38.7															16
18	76	50.9	76	51.3	76	57.5	76	35.1	78	46.2	78	46.7	78	36.9	80	40.4	80	35.4	80	32.0									18
20	75	47.3	75	47.7	75	50.5	75	32.8	77	43.4	77	43.9	77	35.0	79	39.8	76	35.0	79	31.7	80	30.9	80	27.6					20
25	71	38.1	71	36.6	71	38.8	71	28.3	74	35.2	74	36.2	74	30.5	76	34.1	76	31.8	78	26.2	78	30.9	76	27.8	79	22.9	80	20.3	25
30	68	28.3	68	28.7	68	30.9	68	24.7	71	27.9	71	28.8	71	26.9	74	27.7	74	28.6	74	25.3	76	27.3	76	25.8	78	22.9	79	20.3	30
35	64	22.0	64	22.6	64	24.5	64	22.0	68	22.6	68	23.5	68	24.2	71	23.0	71	24.8	71	22.8	74	22.6	74	23.4	76	22.0	76	20.3	35
40	60	17.4	60	17.9	60	19.6	60	19.8	65	18.1	65	19.0	65	21.4	69	19.2	69	20.7	69	20.5	72	19.0	72	20.3	74	19.1	75	18.6	40
45	56	13.9	56	14.3	56	16.1	56	17.4	62	14.7	62	15.4	62	17.9	66	15.6	66	17.2	66	17.3	69	15.8	69	17.1	71	16.4	72	16.1	45
50	51	11.3	51	11.8	51	13.4	51	14.9	58	12.1	58	12.7	58	15.1	63	12.9	63	14.5	63	14.7	66	13.2	66	14.5	69	13.8	71	13.7	50
55	46	9.2	46	9.7	46	11.2	46	12.7	54	9.9	54	10.5	54	12.9	59	10.8	59	12.3	59	12.5	63	11.0	63	12.2	67	11.6	69	11.8	55
60	41	7.5	41	7.9	41	9.4	41	11.0	50	8.1	50	8.8	50	11.0	56	9.0	56	10.5	56	10.7	60	9.2	60	10.3	65	9.9	67	9.9	60
65	36	6.1	36	6.4	36	8.1	36	9.4	46	6.8	46	7.4	46	9.6	52	7.5	52	9.0	52	9.2	57	7.9	57	9.0	62	8.3	64	8.3	65
70	28	4.9	28	5.3	28	6.9	28	8.4	41	5.6	41	6.2	41	8.4	49	6.2	49	7.8	49	8.0	55	6.7	55	7.8	59	7.1	62	7.1	70
75	21	3.7	21	4.3	21	5.7	21	7.4	36	4.6	36	5.2	36	7.4	45	5.3	45	6.8	45	6.9	52	5.6	52	6.7	57	6.1	59	6.1	75
80									30	3.8	30	4.2	30	6.4	41	4.4	41	6.0	41	6.0	49	4.7	49	5.7	54	5.3	58	5.3	80
85									23	2.9	23	3.6	23	5.8	36	3.6	36	5.1	36	5.3	45	4.0	45	4.9	51	4.5	54	4.5	85
90															32	2.9	32	4.4	32	4.7	41	3.3	41	4.4	46	3.8	51	3.8	90
95															26	2.3	26	3.9	26	4.1	37	2.7	37	3.8	45	3.2	49	3.2	95
100															19	1.8	19	3.4	19	3.6	33	2.1	33	3.1	42	2.7	46	2.7	100
110																					21	1.3	21	2.3	34	1.9	39	1.9	110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			46.6		46.6		46.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	°	L	1)	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
8	69	150.0*																											8
9	68	133.4*																											9
10	66	122.1	119.1	73	109.6	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7										10
12	62	110.4	105.8	69	101.1	69	70.5	69	85.8	75	88.2	75	75.4	75	70.5	75	69.9	75	47.5	76	69.9	76	77.1	76	70.5	76	70.5	76	49.7	12
14	58	98.3	94.0	67	92.0	67	70.5	67	61.5	73	86.8	73	69.7	73	70.5	73	66.1	73	44.0	76	65.0	76	74.9	76	70.5	76	69.7	76	45.9	14
16	54	85.3	83.4	64	83.0	64	70.5	64	57.8	70	81.2	70	64.7	70	70.5	70	61.5	70	40.9	74	60.6	74	70.5	74	70.5	74	66.5	74	42.5	16
18	50	75.6	74.8	62	74.7	62	69.8	62	54.8	69	73.8	69	60.5	69	69.3	69	57.6	69	38.3	73	56.6	73	66.4	73	69.5	73	62.6	73	39.8	18
20	45	66.9	66.9	59	66.9	59	67.5	59	51.8	67	66.4	67	56.6	67	66.9	67	54.0	67	35.8	72	52.6	72	62.5	72	67.3	72	58.8	72	37.3	20
25	30	52.4	52.4	52	52.2	52	52.9	52	45.8	61	51.7	61	49.1	61	53.1	61	47.0	61	31.1	67	45.3	67	52.0	67	52.6	67	50.9	67	32.2	25
30				43	44.1	43	43.0	43	41.3	55	43.5	55	42.8	55	43.0	55	41.5	55	27.5	63	39.4	63	44.0	63	42.5	63	43.9	63	28.3	30
35				33	34.4	33	35.3	33	35.9	49	33.8	49	34.1	49	35.5	49	36.2	49	24.6	58	33.0	58	34.2	58	34.8	58	36.5	58	25.3	35
40				17	27.4	17	28.3	17	29.2	42	27.2	42	27.4	42	28.7	42	30.0	42	22.3	53	26.3	53	27.4	53	28.0	53	29.8	53	22.9	40
45										34	22.3	34	22.5	34	23.8	34	25.2	34	20.4	48	21.4	48	22.5	48	23.2	48	24.9	48	20.9	45
50										21	18.5	21	18.7	21	20.1	21	21.2	21	19.0	41	17.6	41	18.7	41	19.4	41	21.0	41	19.1	50
55																				35	14.6	35	15.7	35	16.3	35	17.8	35	17.7	55
60																				26	12.2	26	13.3	26	13.8	26	15.3	26	16.4	60
65																				12	10.2	12	11.5	12	11.9	12	13.5	12	14.6	65
70																														70
75																														75
80																														80
85																														85
90																														90
95																														95
100																														100
110																														110
120																														120
130																														130
Telescoping sequence %																														
Tel. 1	0			0		0		0		46		0		0		0		0		93		46		46		0		0		Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		0		46		93		46		46		0		Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		0		46		46		46		Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93		Tel. 4

1) Over rear with superstructure pin engaged.
* With additional equipment.

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			46.6		46.6		46.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	°	L		°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
8	69		122.1																											8
9	68		113.6																											9
10	66		105.4	73	105.4	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7											10
12	62		92.5	69	92.3	69	70.5	69	65.8	75	86.7	75	75.4	75	70.5	75	69.9	75	47.5	76	69.9	76	77.1	76	70.5	76	70.5	76	49.7	12
14	58		81.7	67	81.5	67	70.5	67	61.5	73	77.1	73	69.7	73	70.5	73	66.1	73	44.0	76	65.0	76	71.4	76	68.9	76	69.7	76	45.9	14
16	54		72.0	64	70.6	64	70.0	64	57.8	70	64.5	70	63.9	70	66.1	70	61.5	70	40.9	74	58.3	74	60.3	74	61.1	74	63.5	74	42.5	16
18	50		62.5	62	60.9	62	62.4	62	54.6	69	55.7	69	56.2	69	58.1	69	56.9	69	38.3	73	51.0	73	52.4	73	53.3	73	55.7	73	39.8	18
20	45		53.2	59	52.0	59	53.3	59	51.2	67	48.1	67	48.5	67	50.3	67	52.0	67	35.8	72	44.2	72	45.5	72	46.4	72	48.6	72	37.3	20
25	30		36.1	52	35.8	52	37.0	52	37.9	61	34.9	61	35.3	61	37.0	61	38.4	61	31.1	67	32.8	67	34.2	67	35.0	67	37.0	67	32.2	25
30				43	25.8	43	26.9	43	27.8	55	25.4	55	25.8	55	27.1	55	28.5	55	27.3	63	24.7	63	25.8	63	26.5	63	28.4	63	28.2	30
35				33	19.8	33	20.8	33	21.5	49	19.2	49	19.7	49	21.0	49	22.3	49	22.3	58	18.6	58	19.7	58	20.4	58	22.1	58	23.2	35
40				17	15.3	17	16.2	17	17.1	42	15.1	42	15.5	42	16.6	42	17.9	42	17.9	53	14.4	53	15.5	53	15.9	53	17.7	53	18.8	40
45										34	12.0	34	12.3	34	13.4	34	14.7	34	14.7	46	11.2	46	12.3	46	12.9	46	14.5	46	15.6	45
50										21	9.7	21	9.9	21	11.0	21	12.2	21	12.3	41	8.9	41	9.9	41	10.6	41	12.1	41	13.1	50
55																				35	7.1	35	8.0	35	8.6	35	10.2	35	11.1	55
60																				28	5.5	26	6.4	26	7.0	26	8.6	26	9.4	60
65																				12	4.3	12	5.2	12	5.7	12	7.2	12	8.1	65
70																														70
75																														75
80																														80
85																														85
90																														90
95																														95
100																														100
110																														110
120																														120
130																														130
Telescoping sequence %																														
Tel. 1	0			0		0		0		46		0		0		0		0		93		46		46		0		0		Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		0		46		93		46		46		0		Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		0		46		46		46		Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93		Tel. 4

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	66.1	76	40.6																					14
16	77	54.3	77	54.8	77	66.1	77	37.6	79	49.2	79	49.6	79	36.7															16
18	76	50.9	76	51.3	76	64.4	76	35.1	78	46.2	78	46.7	78	36.9	90	40.4	80	35.4	80	32.0									18
20	75	47.6	75	48.1	75	62.1	75	32.8	77	43.5	77	43.9	77	35.0	79	39.6	79	35.0	79	31.7	80	30.9	80	27.6					20
25	71	41.0	71	41.4	71	52.6	71	28.3	74	37.7	74	38.3	74	30.5	76	34.8	76	31.6	76	28.2	78	30.9	78	27.6	79	22.9	80	20.3	25
30	68	35.7	68	36.2	68	42.7	68	24.7	71	33.1	71	33.6	71	26.9	74	30.8	74	28.6	74	25.3	76	28.6	76	25.8	78	22.9	79	20.3	30
35	64	31.5	64	32.0	64	35.8	64	22.0	68	29.4	68	29.9	68	24.2	71	27.6	71	25.9	71	22.8	74	25.7	74	23.4	76	22.9	76	20.3	35
40	60	26.7	60	27.2	60	29.1	60	19.8	65	26.2	65	26.7	65	21.8	69	24.8	69	23.6	69	20.7	72	23.3	72	21.6	74	21.6	75	19.6	40
45	56	21.9	56	22.3	56	24.1	56	18.0	62	22.3	62	23.1	62	20.0	66	22.5	66	21.5	66	18.9	69	21.1	69	19.9	71	19.9	72	17.6	45
50	51	18.1	51	18.5	51	20.3	51	16.4	58	18.7	58	19.6	58	18.4	63	19.6	63	19.9	63	17.3	66	19.1	66	18.4	69	18.3	71	15.6	50
55	46	15.0	46	15.5	46	17.2	46	15.1	54	15.8	54	16.6	54	17.0	59	16.7	59	18.0	59	15.9	63	16.8	63	17.0	67	16.7	69	14.3	55
60	41	12.4	41	13.0	41	14.6	41	13.9	50	13.5	50	14.2	50	15.6	56	14.2	56	15.7	56	14.6	60	14.4	60	15.7	65	15.1	67	13.0	60
65	36	10.4	36	10.9	36	12.8	36	12.9	46	11.5	46	12.2	46	14.1	52	12.2	52	13.9	52	13.6	57	12.6	57	13.7	62	13.2	64	11.8	65
70	28	8.8	28	9.4	28	11.1	28	12.2	41	9.8	41	10.4	41	12.6	49	10.4	49	12.2	49	12.1	55	10.9	55	12.0	59	11.7	62	10.8	70
75	21	7.3	21	8.1	21	9.4	21	11.5	36	8.3	36	8.9	36	11.2	45	8.9	45	10.7	45	10.8	52	9.5	52	10.6	57	10.2	59	9.7	75
80									30	7.0	30	7.7	30	10.1	41	7.7	41	9.4	41	9.7	49	8.3	49	9.4	54	8.7	56	8.6	80
85									23	5.8	23	6.7	23	9.1	36	6.7	36	8.2	36	8.7	45	7.1	45	8.2	51	7.6	54	7.6	85
90															32	5.7	32	7.5	32	7.7	41	6.1	41	7.4	48	6.7	51	6.7	90
95															26	4.9	26	6.7	26	6.9	37	5.3	37	6.6	45	5.9	49	5.9	95
100															19	4.2	19	5.9	19	6.2	33	4.6	33	5.9	42	5.1	46	5.1	100
110																					21	3.3	21	4.6	34	3.9	39	3.9	110
120																									23	2.9	31	2.9	120
130																											21	2.1	130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	65.0	78	40.6																					14
16	77	54.2	77	54.8	77	58.5	77	37.6	79	49.2	79	49.6	79	38.7															16
18	76	48.2	76	48.9	76	51.4	76	35.1	78	45.1	78	45.7	78	36.9	80	40.4	80	35.4	80	32.0									18
20	75	42.0	75	42.7	75	45.1	75	32.8	77	40.8	77	41.7	77	35.0	79	39.3	79	35.0	79	31.7	80	30.9	80	27.6					20
25	71	31.7	71	32.2	71	34.4	71	28.3	74	31.1	74	32.0	74	30.5	76	30.7	76	31.6	76	28.2	78	29.1	78	27.6	79	22.9	80	20.3	25
30	68	24.6	68	25.0	68	27.2	68	24.7	71	24.4	71	25.3	71	26.9	74	24.5	74	26.5	74	25.3	76	24.0	76	25.3	78	22.7	79	20.3	30
35	64	19.0	64	19.5	64	21.5	64	22.0	68	19.7	68	20.4	68	23.1	71	20.1	71	22.0	71	22.0	74	19.8	74	21.1	76	19.8	76	19.1	35
40	60	14.8	60	15.3	60	17.0	60	18.8	65	15.5	65	16.4	65	18.8	69	16.4	69	18.1	69	18.3	72	16.4	72	17.7	74	16.7	75	16.2	40
45	56	11.6	56	12.1	56	13.8	56	15.4	62	12.5	62	13.2	62	15.6	66	13.4	66	14.9	66	15.1	69	13.5	69	14.9	71	14.1	72	13.9	45
50	51	9.2	51	9.7	51	11.5	51	13.0	58	10.0	58	10.8	58	13.1	63	10.9	63	12.6	63	12.6	66	11.2	66	12.4	69	11.9	71	11.8	50
55	46	7.3	46	7.8	46	9.5	46	11.1	54	8.1	54	8.9	54	11.1	59	8.9	59	10.5	59	10.6	63	9.3	63	10.4	67	9.9	69	9.9	55
60	41	5.7	41	6.2	41	7.9	41	9.4	50	6.6	50	7.2	50	9.4	56	7.2	56	8.8	56	9.0	60	7.7	60	8.8	65	8.2	67	8.2	60
65	36	4.8	36	5.0	36	6.6	36	8.1	46	5.2	46	5.9	46	8.1	52	5.9	52	7.6	52	7.7	57	6.3	57	7.4	62	7.0	64	7.0	65
70	28	3.5	28	4.0	28	5.5	28	7.1	41	4.2	41	4.8	41	7.1	49	4.8	49	6.5	49	6.6	55	5.3	55	6.4	59	5.8	62	5.8	70
75	21	2.5	21	3.0	21	4.5	21	6.0	36	3.3	36	3.9	36	6.1	45	3.9	45	5.5	45	5.7	52	4.4	52	5.5	57	4.8	59	4.8	75
80									30	2.5	30	3.1	30	5.3	41	3.1	41	4.7	41	4.9	49	3.6	49	4.7	54	4.0	56	4.0	80
85									23	1.8	23	2.5	23	4.7	36	2.5	36	4.0	36	4.2	45	2.9	45	4.0	51	3.3	54	3.3	85
90															32	2.0	32	3.5	32	3.6	41	2.2	41	3.3	48	2.8	51	2.8	90
95															26	1.4	26	3.0	26	3.0	37	1.7	37	2.8	45	2.3	49	2.3	95
100																	19	2.5	19	2.5	33	1.2	33	2.3	42	1.8	46	1.8	100
110																							21	1.4					110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			48.6		48.6		48.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	•			•		•		•		•		•		•		•		•		•		•		•		•		•		
	L	1)		L		L		L		L		L		L		L		L		L		L		L		L		L		
8	69	150.0*																											8
9	68	133.4*																											9
10	66	122.0	117.0	73	109.6	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7										10
12	62	107.6	102.0	69	100.6	69	70.5	69	65.8	75	88.2	75	75.4	75	70.5	75	69.9	75	47.5	78	69.9	78	77.1	78	70.5	78	70.5	78	49.7	12
14	58	91.3	89.1	67	88.7	67	70.5	67	61.5	73	85.8	73	69.7	73	70.5	73	68.1	73	44.0	76	65.0	76	74.9	76	70.5	76	69.7	76	45.9	14
16	54	78.8	78.5	64	78.2	64	70.5	64	57.8	70	77.8	70	64.7	70	70.5	70	61.5	70	40.9	74	60.6	74	70.5	74	70.5	74	66.5	74	42.5	16
18	50	69.9	69.9	62	69.6	62	67.1	62	54.6	69	69.2	69	60.5	69	67.2	69	57.6	69	36.3	73	56.6	73	64.3	73	65.2	73	62.6	73	39.8	18
20	45	62.1	62.1	59	61.9	59	62.5	59	51.6	67	61.0	67	56.6	67	62.6	67	54.0	67	35.8	72	52.7	72	57.6	72	58.5	72	58.5	72	37.3	20
25	30	46.1	46.1	52	47.7	52	48.0	52	45.8	61	45.5	61	45.8	61	47.6	61	47.0	61	31.1	67	41.4	67	42.8	67	43.6	67	45.9	67	32.2	25
30				43	34.4	43	35.5	43	36.4	55	33.7	55	34.1	55	35.7	55	37.2	55	27.5	63	32.8	63	34.4	63	35.0	63	37.0	63	28.3	30
35				33	25.8	33	27.0	33	27.7	49	25.2	49	25.6	49	27.2	49	28.5	49	24.6	58	24.5	58	25.6	58	26.3	58	28.4	58	25.3	35
40				17	20.0	17	21.1	17	21.8	42	19.6	42	20.0	42	21.3	42	22.6	42	22.0	53	18.9	53	20.0	53	20.7	53	22.4	53	22.7	40
45										34	15.7	34	16.0	34	17.3	34	18.6	34	18.5	46	14.9	46	16.0	46	16.6	46	18.4	46	19.2	45
50										21	12.7	21	13.0	21	14.2	21	15.5	21	15.5	41	11.8	41	13.0	41	13.5	41	15.3	41	16.2	50
55																				35	9.4	35	10.6	35	11.1	35	12.8	35	13.8	55
60																				28	7.4	28	8.5	28	9.2	28	10.8	28	11.8	60
65																				12	5.7	12	7.0	12	7.5	12	9.4	12	10.3	65
70																														70
75																														75
80																														80
85																														85
90																														90
95																														95
100																														100
110																														110
120																														120
130																														130
Telescoping sequence %																														
Tel. 1	0			0		0		0		46		0		0		0		0		93		46		46		0		0		Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		0		46		93		46		46		0		Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		0		46		46		46		Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93		Tel. 4

1) Over rear with superstructure pin engaged.
* With additional equipment.

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																												Working Radius (ft)
	36.1			48.6		48.6		48.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		
	•			•		•		•		•		•		•		•		•		•		•		•		•		•		
	L			L		L		L		L		L		L		L		L		L		L		L		L		L		
8	69		118.1																										8
9	68		109.9																										9
10	66		101.8	73	101.2	73	70.5	73	70.2	77	87.0	77	82.1	77	70.5	77	70.5	77	51.7										10
12	62		87.9	69	81.5	69	70.5	69	65.8	75	71.8	75	72.2	75	69.0	75	69.7	75	47.5	78	63.5	78	65.4	78	66.5	78	67.8	78	49.7	12
14	58		73.3	67	64.9	67	65.6	67	61.5	73	58.0	73	58.5	73	60.6	73	62.7	73	44.0	76	51.9	76	53.6	76	54.6	76	57.3	76	45.9	14
16	54		59.5	64	53.4	64	54.8	64	55.3	70	48.1	70	48.6	70	50.6	70	52.6	70	40.9	74	43.4	74	45.0	74	45.9	74	48.5	74	42.5	16
18	50		48.7	62	45.6	62	46.9	62	48.0	69	41.3	69	41.8	69	43.6	69	45.5	69	38.3	73	37.4	73	38.9	73	39.7	73	42.2	73	39.8	18
20	45		39.0	59	38.5	59	39.8	59	40.9	67	35.3	67	35.7	67	37.4	67	39.2	67	35.8	72	32.0	72	33.5	72	34.2	72	36.6	72	37.1	20
25	30		25.9	52	25.6	52	26.8	52	27.6	61	24.9	61	25.4	61	26.9	61	28.4	61	28.5	67	23.4	67	24.7	67	25.4	67	27.5	67	28.6	25
30				43	18.0	43	19.1	43	19.8	55	17.4	55	17.8	55	19.3	55	20.7	55	20.7	63	16.7	63	17.8	63	18.5	63	20.4	63	21.5	30
35				33	13.2	33	14.3	33	15.0	49	12.8	49	13.2	49	14.4	49	15.7	49	15.9	58	12.1	58	13.2	58	13.9	58	15.5	58	16.6	35
40				17	10.0	17	10.8	17	11.5	42	9.4	42	9.8	42	11.1	42	12.3	42	12.5	53	8.7	53	9.8	53	10.5	53	12.2	53	13.1	40
45										34	7.1	34	7.5	34	8.6	34	9.9	34	9.9	48	6.4	48	7.5	48	8.2	48	9.7	48	10.6	45
50										21	5.4	21	5.7	21	6.8	21	8.0	21	8.1	41	4.8	41	5.7	41	6.2	41	7.9	41	8.8	50
55																				35	3.2	35	4.3	35	4.7	35	6.4	35	7.3	55
60																				26	2.0	26	3.1	26	3.6	26	5.1	26	6.0	60
65																				12	1.2	12	2.1	12	2.5	12	4.1	12	5.0	65
70																														70
75																														75
80																														80
85																														85
90																														90
95																														95
100																														100
110																														110
120																														120
130																														130
Telescoping sequence %																														
Tel. 1	0			0		0		0		46		0		0		0		0		93		46		46		0		0		Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		0		46		93		46		46		0		Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		0		46		46		46		Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93		Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	66.1	78	40.6																					14
16	77	54.3	77	54.8	77	66.1	77	37.6	79	49.2	79	49.6	79	38.7															16
18	76	50.9	76	51.3	76	61.8	76	35.1	78	46.2	78	46.7	78	38.9	80	40.4	80	35.4	80	32.0									18
20	75	47.6	75	48.1	75	56.3	75	32.5	77	43.5	77	43.9	77	35.0	79	39.6	79	35.0	79	31.7	80	30.9	80	27.6					20
25	71	39.3	71	39.9	71	42.7	71	28.3	74	37.4	74	38.3	74	30.5	76	34.8	76	31.6	76	28.2	78	30.9	78	27.6	79	22.9	80	20.3	25
30	68	30.5	68	31.1	68	33.5	68	24.7	71	29.8	71	30.9	71	26.9	74	29.6	74	28.6	74	25.3	76	28.4	76	25.8	78	22.9	79	20.3	30
35	64	24.9	64	25.4	64	27.5	64	22.0	68	24.8	68	24.6	68	24.2	71	24.0	71	25.6	71	22.8	74	23.5	74	23.4	76	22.9	76	20.3	35
40	60	19.3	60	19.8	60	21.6	60	19.8	65	20.0	65	20.9	65	21.7	69	19.7	69	22.8	69	20.7	72	19.5	72	21.0	74	19.5	75	19.3	40
45	56	15.3	56	15.7	56	17.7	56	18.0	62	16.2	62	17.0	62	19.0	66	16.8	66	18.6	66	18.5	69	17.0	69	18.4	71	16.8	72	18.4	45
50	51	12.1	51	12.7	51	14.7	51	15.9	58	13.1	58	13.9	58	16.2	63	14.0	63	15.7	63	15.9	66	14.3	66	15.5	69	14.6	71	14.5	50
55	46	9.6	46	10.2	46	12.1	46	13.7	54	10.6	54	11.3	54	13.7	59	11.5	59	13.2	59	13.5	63	11.9	63	13.0	67	12.7	69	12.7	55
60	41	7.6	41	8.3	41	10.0	41	11.6	50	8.5	50	9.4	50	11.6	56	9.4	56	11.2	56	11.4	60	9.8	60	11.0	65	10.7	67	10.7	60
65	36	5.9	36	6.6	36	8.4	36	10.1	46	7.0	46	7.7	46	10.1	52	7.9	52	9.7	52	9.9	57	8.1	57	9.4	62	9.0	64	9.0	65
70	28	4.8	28	5.4	28	7.1	28	8.7	41	5.7	41	6.3	41	8.7	49	6.4	49	8.3	49	8.4	55	6.9	55	8.1	59	7.6	62	7.6	70
75	21	3.6	21	4.2	21	6.0	21	7.4	36	4.5	36	5.2	36	7.7	45	5.3	45	7.1	45	7.2	52	5.7	52	6.9	57	6.4	59	6.4	75
80									30	3.5	30	4.2	30	6.8	41	4.4	41	6.1	41	6.4	49	4.7	49	6.0	54	5.3	58	5.3	80
85									23	2.7	23	3.4	23	5.8	36	3.4	36	5.1	36	5.4	45	4.0	45	5.1	51	4.5	54	4.5	85
90															32	2.7	32	4.4	32	4.7	41	3.2	41	4.4	48	3.6	51	3.6	90
95															26	2.1	26	3.8	26	4.1	37	2.4	37	3.8	45	3.0	49	3.0	95
100															19	1.6	19	3.1	19	3.6	33	1.9	33	3.1	42	2.5	46	2.5	100
110																					21	1.2	21	2.1	34	1.6	39	1.6	110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	48.3	78	49.1	78	51.9	78	40.6																					14
16	77	40.8	77	41.5	77	44.2	77	37.6	79	39.2	79	40.3	79	38.7															16
18	76	35.4	76	36.0	76	38.6	76	35.1	78	34.2	78	35.3	78	36.5	80	33.4	80	33.8	80	32.0									18
20	75	30.5	75	31.2	75	33.6	75	32.8	77	29.7	77	30.8	77	34.1	79	29.3	79	31.5	79	31.5	80	28.2	80	27.3					20
25	71	22.4	71	23.1	71	25.3	71	27.2	74	22.2	74	23.2	74	26.3	76	22.2	76	24.4	76	24.4	76	21.6	78	23.2	79	21.2	80	19.9	25
30	68	16.9	68	17.6	68	19.6	68	21.5	71	17.0	71	17.9	71	20.8	74	17.3	74	19.3	74	19.5	76	17.1	76	18.4	78	17.1	79	16.7	30
35	64	12.5	64	13.0	64	14.8	64	16.6	68	13.2	68	14.0	68	16.6	71	13.9	71	15.7	71	15.9	74	13.7	74	15.0	76	13.8	78	13.6	35
40	60	9.2	60	9.6	60	11.4	60	13.1	65	10.0	65	10.7	65	13.1	69	10.9	69	12.7	69	12.9	72	11.2	72	12.5	74	11.4	75	11.2	40
45	56	6.8	56	7.3	56	9.0	56	10.6	62	7.5	62	8.4	62	10.6	66	8.4	66	10.2	66	10.4	69	8.8	69	9.9	71	9.4	72	9.2	45
50	51	5.0	51	5.5	51	7.1	51	8.8	58	5.7	58	6.6	58	8.8	63	6.6	63	8.3	63	8.4	66	7.0	66	8.1	69	7.5	71	7.5	50
55	46	3.6	46	4.0	46	5.6	46	7.3	54	4.3	54	5.1	54	7.3	59	5.1	59	6.8	59	6.8	63	5.5	63	6.6	67	6.0	69	6.0	55
60	41	2.5	41	2.9	41	4.4	41	6.0	50	3.1	50	3.8	50	6.0	56	3.8	56	5.5	56	5.5	60	4.2	60	5.3	65	4.9	67	4.9	60
65	36	1.4	36	1.9	36	3.4	36	5.0	46	2.1	46	2.8	46	5.0	52	2.8	52	4.5	52	4.5	57	3.2	57	4.3	62	3.9	64	3.9	65
70					28	2.6	28	4.1			41	1.9	41	4.1	49	2.1	49	3.7	49	3.7	55	2.4	55	3.5	59	3.0	62	3.0	70
75					21	1.7	21	3.3			36	1.1	36	3.4	45	1.4	45	2.9	45	3.0	52	1.6	52	2.7	57	2.3	59	2.3	75
80													30	2.7			41	2.3	41	2.5			49	2.1	54	1.6	58	1.6	80
85													23	2.2			36	1.8	36	1.8			45	1.6	51	1.1	54	1.1	85
90																	32	1.3	32	1.4			41	1.1					90
95																													95
100																													100
110																													110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		46		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 0 lbs

Working Radius (ft)	Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom. On outriggers, 360° working area. Outrigger base 21.00 ft. Boom length (ft): 36.1			48.6		48.6		48.6		61.4		61.4		61.4		61.4		61.4		73.8		73.8		73.8		73.8		73.8		Working Radius (ft)
	° L	1)		° L		° L		° L		° L		° L		° L		° L		° L		° L		° L		° L		° L		° L		
8	69	150.0*																												8
9	66	133.4*																												9
10	66	121.4	112.4	73	109.2	73	70.5	73	70.2	77	88.2	77	82.1	77	70.5	77	70.5	77	51.7											10
12	62	101.6	96.3	69	96.0	69	70.5	69	65.8	75	87.5	75	75.4	75	70.5	75	69.9	75	47.5	78	69.9	78	77.1	78	70.5	78	70.5	78	49.7	12
14	58	86.7	83.3	67	83.2	67	70.5	67	61.5	73	78.6	73	69.7	73	70.5	73	66.1	73	44.0	76	65.0	76	71.3	76	66.9	76	69.7	76	45.9	14
16	54	75.3	72.8	64	71.0	64	70.2	64	57.8	70	64.3	70	63.5	70	65.9	70	61.5	70	40.9	74	57.5	74	59.5	74	60.5	74	63.0	74	42.5	16
18	50	64.4	63.6	62	60.2	62	61.8	62	54.6	69	54.3	69	54.8	69	57.0	69	56.0	69	38.3	73	46.8	73	50.6	73	51.4	73	54.3	73	39.8	18
20	45	53.8	54.5	59	50.5	59	52.1	59	51.2	67	45.5	67	45.9	67	46.1	67	50.1	67	35.8	72	40.8	72	42.5	72	43.4	72	46.2	72	37.3	20
25	30	35.1	34.5	52	34.3	52	35.7	52	36.6	61	32.1	61	32.5	61	34.4	61	36.2	61	31.1	67	28.4	67	30.0	67	31.0	67	33.4	67	32.2	25
30				43	23.1	43	24.2	43	25.1	55	22.5	55	22.9	55	24.4	55	26.0	55	26.2	63	21.6	63	21.6	63	23.8	63	25.9	63	27.3	30
35				33	16.8	33	17.9	33	16.7	49	16.3	49	16.6	49	18.1	49	19.5	49	19.7	58	15.5	58	16.8	58	17.4	58	19.4	58	20.6	35
40				17	12.5	17	13.3	17	14.2	42	11.9	42	12.4	42	13.7	42	15.0	42	15.3	53	11.3	53	12.4	53	13.1	53	14.9	53	15.9	40
45										34	8.8	34	9.4	34	10.7	34	11.8	34	12.2	48	8.1	46	9.4	48	10.0	46	12.0	46	12.9	45
50										21	6.5	21	7.2	21	8.4	21	9.7	21	9.9	41	5.9	41	6.9	41	7.7	41	9.7	41	10.6	50
55																				35	4.0	35	5.1	35	5.9	35	7.8	35	8.7	55
60																				26	2.5	26	3.7	26	4.4	26	6.2	26	7.2	60
65																				12	1.4	12	2.6	12	3.0	12	5.0	12	5.9	65
70																														70
75																														75
80																														80
85																														85
90																														90
95																														95
100																														100
110																														110
120																														120
130																														130
Telescoping sequence %																														
Tel. 1	0			0		0		0		48		0		0		0		0		93		46		46		0		0		Tel. 1
Tel. 2	0			46		0		0		46		93		46		0		0		46		93		46		46		0		Tel. 2
Tel. 3	0			0		46		0		0		0		46		46		0		0		0		46		46		46		Tel. 3
Tel. 4	0			0		0		46		0		0		0		46		93		0		0		0		46		93		Tel. 4

1) Over rear with superstructure pin engaged.

* With additional equipment.

Counterweight 0 lbs

Working Radius (ft)	Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom, On outriggers, 360° working area. Outrigger base 14.44 ft. Boom length (ft): 36.1			48.6		61.4		
	° L			° L		° L		
10	66		90.0	73	69.9	77	51.7	10
12	62		65.7	69	59.8	75	47.5	12
14	58		50.7	67	47.4	73	42.9	14
16	54		39.9	64	38.8	70	36.6	16
18	50		32.0	62	32.6	69	31.4	18
20	45		25.1	59	27.1	67	26.8	20
25	30		15.9	52	17.5	61	18.6	25
30				43	12.0	55	12.9	30
35				33	8.6	49	9.5	35
40				17	6.1	42	6.8	40
45						34	5.2	45
50						21	3.9	50
55								55
60								60
Telescoping sequence %								
Tel. 1	0			0		0		Tel. 1
Tel. 2	0			0		0		Tel. 2
Tel. 3	0			0		0		Tel. 3
Tel. 4	0			46		93		Tel. 4

Counterweight 0 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on telescopic boom
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length (ft)																										Working Radius (ft)
	86.3		86.3		86.3		86.3		98.8		98.8		98.8		111.5		111.5		111.5		124.0		124.0		136.5		144.4		
	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	•	L	
8																													8
9																													9
10																													10
12																													12
14	78	58.2	78	58.5	78	64.8	78	40.8																					14
16	77	53.0	77	53.8	77	57.6	77	37.8	79	49.2	79	49.6	79	38.7															16
18	76	45.7	76	46.6	76	49.4	76	35.1	78	43.2	78	44.1	78	36.9	80	38.9	80	35.4	80	32.0									18
20	75	38.4	75	39.3	75	42.2	75	32.8	77	37.0	77	38.3	77	35.0	79	36.1	79	35.0	79	31.7	80	30.7	80	27.6					20
25	71	27.2	71	27.8	71	30.6	71	28.3	74	26.8	74	27.9	74	30.3	76	26.5	76	28.9	76	28.0	78	25.7	78	26.3	79	22.9	80	20.3	25
30	68	20.3	68	20.8	68	23.2	68	24.6	71	20.0	71	21.1	71	24.2	74	20.3	74	22.5	74	22.7	76	19.8	76	21.4	76	19.7	79	19.2	30
35	64	15.8	64	16.5	64	18.6	64	20.5	68	16.0	68	17.1	68	19.9	71	15.9	71	18.1	71	18.3	74	15.7	74	17.3	76	15.8	76	15.5	35
40	60	11.7	60	12.2	60	14.1	60	15.9	65	12.6	65	13.5	65	16.1	69	13.5	69	15.5	69	15.7	72	12.9	72	14.1	74	13.0	75	12.7	40
45	56	8.5	56	9.2	56	11.0	56	12.7	62	9.6	62	10.3	62	12.9	66	10.5	66	12.3	66	12.5	69	10.7	69	11.9	71	11.3	72	10.4	45
50	51	6.2	51	6.7	51	8.7	51	10.5	58	7.3	58	7.9	58	10.6	63	8.1	63	10.0	63	10.3	66	8.6	66	9.8	69	9.2	71	8.8	50
55	46	4.3	46	4.8	46	6.9	46	8.6	54	5.3	54	6.1	54	8.6	59	6.2	59	8.2	59	8.4	63	6.7	63	8.0	67	7.4	69	7.4	55
60	41	2.9	41	3.5	41	5.3	41	7.0	50	3.7	50	4.6	50	7.1	56	4.6	56	6.6	56	6.8	60	5.1	60	6.4	65	5.9	67	5.9	60
65	36	1.9	36	2.3	36	4.1	36	5.7	46	2.6	46	3.3	46	5.9	52	3.5	52	5.2	52	5.5	57	3.9	57	5.2	62	4.6	64	4.6	65
70					28	3.1	28	4.8	41	1.7	41	2.4	41	4.8	49	2.6	49	4.3	49	4.8	55	2.9	55	4.2	59	3.5	62	3.5	70
75					21	2.1	21	3.9			36	1.8	36	3.9	45	1.7	45	3.5	45	3.8	52	2.0	52	3.3	57	2.7	59	2.7	75
80													30	3.2			41	2.7	41	2.7			49	2.5	54	2.0	56	2.0	80
85													23	2.7			38	2.0	38	2.2			45	1.8	51	1.4	54	1.4	85
90																	32	1.5	32	1.7			41	1.4					90
95																													95
100																													100
110																													110
120																													120
130																													130
Telescoping sequence %																													
Tel. 1	93		93		46		0		93		93		0		93		46		0		93		46		93		100		Tel. 1
Tel. 2	93		48		46		0		93		46		46		93		46		93		93		93		93		100		Tel. 2
Tel. 3	0		46		46		93		46		46		93		46		93		93		93		93		93		100		Tel. 3
Tel. 4	0		0		46		93		0		46		93		46		93		93		46		93		93		100		Tel. 4

Counterweight 33,069lbs

Lifting capacities in 1,000 lbs according per SAE J765
on telescopic boom
On rubber/ over rear

Working Radius (ft)	Boom length (ft)						
	36.1		48.6		61.4		
	•	L	•	L	•	L	
10	66	47.0	73	47.9	77	48.3	10
12	62	42.0	69	42.9	75	43.2	12
14	58	37.8	67	38.7	73	38.2	14
16	54	33.6	64	34.9	70	33.9	16
18	50	29.1	62	30.6	69	30.4	18
20	45	24.9	59	26.4	67	27.1	20
25	30	19.2	52	19.5	61	20.2	25
30			43	14.9	55	15.6	30
35			33	11.6	49	12.3	35
40			17	9.2	42	9.9	40
45					34	8.2	45
50					21	6.7	50
55							55
60							60
Telescoping sequence %							
Tel. 1	0		0		0		Tel. 1
Tel. 2	0		0		0		Tel. 2
Tel. 3	0		0		0		Tel. 3
Tel. 4	0		46		93		Tel. 4

** Over rear with superstructure locking pin engaged.

Counterweight 27,558lbs

Lifting capacities in 1,000 lbs according per SAE J765
on telescopic boom
On rubber/ over rear

Working Radius (ft)	Boom length (ft)						
	36.1		48.6		61.4		
	•	L	•	L	•	L	
10	66	47.0	73	46.0	77	46.0	10
12	62	42.0	69	41.8	75	39.5	12
14	58	36.2	67	36.1	73	34.4	14
16	54	30.2	64	31.5	70	30.1	16
18	50	25.9	62	27.4	69	27.0	18
20	45	22.0	59	23.6	67	24.0	20
25	30	15.8	52	17.2	61	18.0	25
30			43	12.9	55	13.8	30
35			33	10.1	49	10.7	35
40			17	7.9	42	8.6	40
45					34	6.9	45
50					21	5.5	50
55							55
60							60
Telescoping sequence %							
Tel. 1	0		0		0		Tel. 1
Tel. 2	0		0		0		Tel. 2
Tel. 3	0		0		0		Tel. 3
Tel. 4	0		46		93		Tel. 4

** Over rear with superstructure locking pin engaged.

Counterweight 13,228lbs

Lifting capacities in 1,000 lbs according per SAE J765
on telescopic boom
On rubber/ over rear

Working Radius (ft)	Boom length (ft)						
	36.1		48.6		61.4		
	•	L	•	L	•	L	
10	66	40.6	73	38.3	77	35.7	10
12	62	33.5	69	32.0	75	30.4	12
14	58	27.5	67	27.4	73	26.3	14
16	54	22.7	64	23.6	70	22.9	16
18	50	19.3	62	20.7	69	20.3	18
20	45	16.2	59	17.7	67	18.0	20
25	30	11.1	52	12.6	61	13.4	25
30			43	9.2	55	9.9	30
35			33	6.8	49	7.5	35
40			17	5.1	42	5.8	40
45					34	4.4	45
50					21	3.4	50
55							55
60							60
Telescoping sequence %							
Tel. 1	0		0		0		Tel. 1
Tel. 2	0		0		0		Tel. 2
Tel. 3	0		0		0		Tel. 3
Tel. 4	0		46		93		Tel. 4

** Over rear with superstructure locking pin engaged.

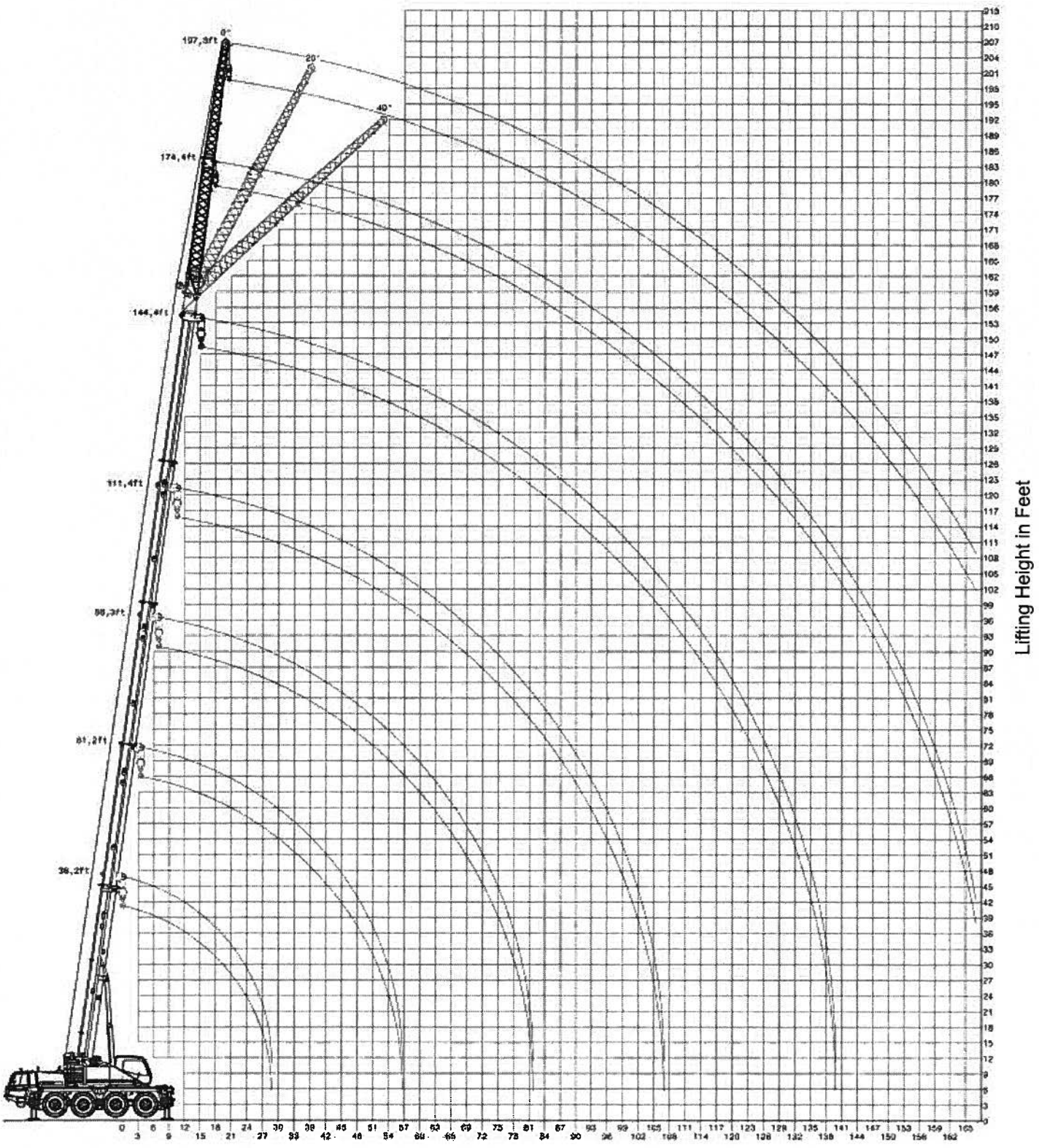
Counterweight 0lbs

Lifting capacities in 1,000 lbs according per SAE J765
on telescopic boom
On rubber/ over rear

Working Radius (ft)	Boom length (ft)						
	36.1		48.6		61.4		
	•	L	•	L	•	L	
10	66	30.0	73	28.5	77	27.0	10
12	62	24.0	69	23.6	75	22.6	12
14	58	18.8	67	20.0	73	19.2	14
16	54	15.2	64	16.7	70	16.6	16
18	50	12.6	62	14.2	69	14.6	18
20	45	10.3	59	11.9	67	12.7	20
25	30	6.5	52	7.9	61	8.7	25
30			43	5.3	55	6.0	30
35			33	3.6	49	4.3	35
40			17	2.3	42	3.0	40
45					34	2.0	45
50							50
55							55
60							60
Telescoping sequence %							
Tel. 1	0		0		0		Tel. 1
Tel. 2	0		0		0		Tel. 2
Tel. 3	0		0		0		Tel. 3
Tel. 4	0		46		93		Tel. 4

** Over rear with superstructure locking pin engaged.

ATF65G-4 WORKING RANGE CHART



NOTE: Boom and jib geometry shown are for unloaded condition and machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	21.0	79	16.8			79	13.2					80	11.9					30
35	51	19.8	58	18.3	64	16.1	73	19.1	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.6	52	17.1	58	15.4	71	17.7	75	14.7	78	12.9	76	12.5	79	11.4			77	11.6	80	10.7			40
45	38	16.0	45	16.1	50	14.9	68	16.3	72	13.8	75	12.3	74	11.6	77	10.9			75	10.9	78	10.2			45
50	30	14.6	37	15.3			66	15.3	70	13.1	72	11.7	73	10.9	76	10.3	78	9.4	74	10.3	77	9.7	79	9.1	50
55							63	14.2	67	12.4	70	11.2	71	10.2	74	9.8	76	9.0	72	9.7	75	9.2	77	8.6	55
60							61	13.0	65	11.8	67	10.7	70	9.6	73	9.4	75	8.5	71	9.1	74	8.8	76	8.3	60
65							58	12.0	62	11.3	64	10.4	68	9.1	70	8.9	72	8.2	69	8.5	72	8.4	74	8.0	65
70							55	11.0	59	10.8	61	10.1	66	8.6	69	8.4	71	7.9	68	8.1	70	7.9	72	7.6	70
75							52	10.1	56	10.2	58	9.7	64	8.2	67	8.0	69	7.6	66	7.7	68	7.5	70	7.3	75
80							49	9.3	53	9.5	55	9.4	62	7.8	65	7.6	67	7.4	64	7.1	67	7.1	69	7.0	80
85							46	8.6	50	8.9	52	8.8	60	7.1	63	7.3	65	7.1	62	6.4	65	6.6	67	6.6	85
90							43	7.8	46	8.0	48	8.2	58	6.6	61	6.8	63	6.7	60	5.9	63	6.1	65	6.1	90
95							40	7.0	43	7.3	44	7.4	56	6.1	59	6.3	61	6.4	58	5.4	61	5.6	63	5.6	95
100							36	6.1	39	6.5	40	6.6	53	5.6	56	5.8	58	6.0	56	4.9	59	5.2	60	5.2	100
110							26	4.8	29	4.8			49	4.6	52	4.8	53	5.0	52	4.1	49	4.3	56	4.5	110
120							11	3.8					43	3.8	46	4.1	47	4.2	47	3.4	46	3.6	51	3.8	120
130													38	2.8	40	3.0	41	3.2	42	2.7	44	2.9	45	2.9	130
140													31	2.1	33	2.3			35	2.1	37	2.3	39	2.3	140
150													20	1.6	23	1.6			27	1.4	30	1.6			150
160																									160
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	10.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	10.6	74	9.1	79	7.6	74	7.7	79	7.5			75	7.3					55
60	42	8.1	52	7.7	60	7.2	67	10.5	73	8.8	78	7.5	73	7.7	78	7.2			74	7.3	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	10.2	70	8.4	75	7.3	71	7.7	76	6.9			72	7.3	77	6.6			65
70	31	7.1	41	7.1	46	6.9	62	9.7	68	8.1	73	7.1	70	7.3	75	6.5			71	6.8	76	6.3	80	5.9	70
75	23	6.5	32	7.0	37	6.7	60	9.3	66	7.8	71	7.0	68	6.9	73	6.3	77	5.9	69	6.4	74	6.1	78	5.6	75
80	14	6.0	21	6.8			58	8.9	63	7.6	68	6.8	67	6.5	72	6.1	75	5.7	68	6.1	73	5.9	76	5.5	80
85							55	8.2	61	7.3	65	6.6	65	6.2	70	6.0	73	5.5	66	5.8	71	5.5	74	5.3	85
90							53	7.7	59	7.1	63	6.5	64	6.0	69	5.8	72	5.4	65	5.4	70	5.4	73	5.1	90
95							51	7.1	57	6.8	60	6.3	62	5.7	67	5.5	70	5.2	63	5.0	68	5.1	71	5.0	95
100							48	6.5	54	6.6	57	6.1	60	5.4	65	5.2	68	5.0	62	4.5	66	4.7	70	4.8	100
110							42	5.3	48	5.9	51	5.8	56	4.5	61	4.9	64	4.7	58	3.9	62	4.1	66	4.3	110
120							36	4.3	41	4.7	44	5.2	52	3.8	56	4.3	59	4.3	54	3.2	59	3.5	62	3.6	120
130							27	3.3	33	3.8			48	3.2	52	3.6	55	3.8	50	2.7	55	2.9	58	3.1	130
140							15	2.6	23	2.6			43	2.5	47	2.9	50	3.2	46	2.1	50	2.5	53	2.7	140
150													37	1.8	41	2.1	43	2.3	40	1.6	44	2.0	46	2.2	150
160													30	1.2	34	1.6			33	1.2	38	1.5	41	1.6	160
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	21.0	79	16.8			79	13.2					80	11.9					30
35	51	19.8	58	18.3	64	16.1	73	19.1	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.6	52	17.1	58	15.4	71	17.6	75	14.7	78	12.9	76	12.5	79	11.4			77	11.6	80	10.7			40
45	38	16.0	45	16.1	50	14.9	68	15.8	72	13.8	75	12.3	74	11.8	77	10.9			75	10.9	78	10.2			45
50	30	14.6	37	15.3			66	13.5	70	13.1	72	11.7	73	10.9	76	10.3	78	9.4	74	10.3	77	9.7	79	9.1	50
55							63	11.3	67	11.9	70	11.2	71	10.2	74	9.8	76	9.0	72	9.7	75	9.2	77	8.6	55
60							61	9.4	65	10.3	67	10.6	70	9.5	73	9.4	75	8.5	71	9.1	74	8.8	76	8.3	60
65							58	8.1	62	8.8	64	9.4	68	8.3	70	8.9	72	8.2	69	8.3	72	8.4	74	8.0	65
70							55	6.9	59	7.6	61	8.1	66	7.1	69	7.8	71	7.9	68	7.1	70	7.6	72	7.6	70
75							52	5.8	56	6.5	58	6.8	64	6.0	67	6.7	69	7.1	66	6.0	68	6.7	70	7.0	75
80							49	4.9	53	5.5	55	5.7	62	5.1	65	5.7	67	6.2	64	5.1	67	5.7	69	6.2	80
85							46	4.0	50	4.7	52	4.9	60	4.4	63	4.9	65	5.3	62	4.2	65	4.9	67	5.3	85
90							43	3.3	46	3.8	48	4.1	58	3.8	61	4.2	63	4.7	60	3.6	63	4.2	65	4.5	90
95							40	2.8	43	3.2	44	3.3	56	3.1	59	3.5	61	4.0	58	3.0	61	3.5	63	3.9	95
100							36	2.3	39	2.7	40	2.7	53	2.5	56	2.9	58	3.3	56	2.5	59	2.9	60	3.3	100
110							26	1.4	29	1.7			49	1.6	52	1.9	53	2.1	52	1.5	49	1.9	56	2.1	110
120															46	1.2	47	1.4			46	1.2	51	1.4	120
130																									130
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 33,069 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	10.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	10.6	74	9.1	79	7.6	74	7.7	79	7.5			75	7.3					55
60	42	8.1	52	7.7	60	7.2	67	10.3	73	8.8	78	7.5	73	7.7	78	7.2			74	7.3	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	8.8	70	8.4	75	7.3	71	7.7	76	6.9			72	7.3	77	6.6			65
70	31	7.1	41	7.1	46	6.9	62	7.6	68	8.1	73	7.1	70	7.3	75	6.5			71	6.8	76	6.3	80	5.9	70
75	23	6.5	32	7.0	37	6.7	60	6.5	66	7.5	71	7.0	68	6.5	73	6.3	77	5.9	69	6.2	74	6.1	78	5.8	75
80	14	6.0	21	6.8			58	5.6	63	6.6	68	6.7	67	5.6	72	6.1	75	5.7	68	5.5	73	5.9	76	5.5	80
85							55	4.9	61	5.8	65	6.4	65	4.9	70	5.8	73	5.5	66	4.7	71	5.5	74	5.3	85
90							53	4.2	59	4.9	63	5.6	64	4.1	69	5.1	72	5.4	65	4.0	70	4.9	73	5.1	90
95							51	3.5	57	4.2	60	4.9	62	3.4	67	4.4	70	5.0	63	3.4	68	4.3	71	4.9	95
100							48	2.9	54	3.6	57	4.2	60	2.9	65	3.8	68	4.4	62	2.9	66	3.8	70	4.4	100
110							42	2.1	48	2.6	51	3.0	56	1.9	61	2.7	64	3.2	58	1.9	62	2.6	66	3.2	110
120									41	1.6	44	2.0	52	1.2	56	1.9	59	2.2	54	1.2	59	1.8	62	2.2	120
130															52	1.2	55	1.4					58	1.4	130
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 27,558 lbs

Working Radius (ft)	Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft On outriggers, 360° working area Outrigger base 21.00 ft																						Working Radius (ft)
	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft					
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset					
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°	
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	21.0	79	16.8			79	13.2					80	11.9					30
35	51	19.6	58	18.3	64	16.1	73	19.1	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.6	52	17.1	58	15.4	71	17.7	75	14.7	78	12.9	76	12.5	79	11.4			77	11.6	80	10.7			40
45	38	16.0	45	16.1	50	14.9	68	16.3	72	13.8	75	12.3	74	11.6	77	10.9			75	10.9	78	10.2			45
50	30	14.6	37	15.3			66	15.3	70	13.1	72	11.7	73	10.9	76	10.3	78	9.4	74	10.3	77	9.7	79	9.1	50
55							63	14.2	67	12.4	70	11.2	71	10.2	74	9.8	76	9.0	72	9.7	75	9.2	77	8.6	55
60							61	13.0	65	11.8	67	10.7	70	9.6	73	9.4	75	8.5	71	9.1	74	8.8	76	8.3	60
65							58	12.0	62	11.3	64	10.4	68	9.1	70	8.9	72	8.2	69	8.5	72	8.4	74	8.0	65
70							55	10.9	59	10.8	61	10.1	66	8.6	69	8.4	71	7.9	68	8.1	70	7.9	72	7.6	70
75							52	9.6	56	10.0	58	9.7	64	8.2	67	8.0	69	7.6	66	7.7	68	7.5	70	7.3	75
80							49	8.3	53	9.0	55	9.2	62	7.8	65	7.6	67	7.4	64	7.1	67	7.1	69	7.0	80
85							46	7.1	50	7.8	52	8.0	60	7.1	63	7.3	65	7.1	62	6.4	65	6.6	67	6.6	85
90							43	6.1	46	6.8	48	7.0	58	6.6	61	6.8	63	6.7	60	5.9	63	6.1	65	6.1	90
95							40	5.3	43	5.9	44	6.0	56	5.8	59	6.1	61	6.4	58	5.4	61	5.6	63	5.6	95
100							36	4.7	39	5.1	40	5.0	53	4.9	56	5.3	58	5.9	56	4.9	59	5.1	60	5.2	100
110							26	3.5	29	3.6			49	3.6	52	4.1	53	4.4	52	3.5	49	4.1	56	4.3	110
120							11	2.5					43	2.7	46	2.9	47	3.1	47	2.5	46	2.9	51	3.1	120
130													38	1.8	40	2.1	41	2.1	42	1.8	44	2.1	45	2.1	130
140													31	1.2	33	1.4			35	1.2	37	1.4	39	1.4	140
150																									150
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 27,558 lbs

Working Radius (ft)	Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft On outriggers, 360° working area Outrigger base 21.00 ft																						Working Radius (ft)
	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft					
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset					
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°	
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	10.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	10.6	74	9.1	79	7.6	74	7.7	79	7.5			75	7.3					55
60	42	8.1	52	7.7	60	7.2	67	10.5	73	8.8	78	7.5	73	7.7	78	7.2			74	7.3	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	10.2	70	8.4	75	7.3	71	7.7	76	6.9			72	7.3	77	6.6			65
70	31	7.1	41	7.1	46	6.9	62	9.7	68	8.1	73	7.1	70	7.3	75	6.5			71	6.8	76	6.3	80	5.9	70
75	23	6.5	32	7.0	37	6.7	60	9.3	66	7.8	71	7.0	68	6.9	73	6.3	77	5.9	69	6.4	74	6.1	78	5.6	75
80	14	6.0	21	6.8			58	8.8	63	7.6	68	6.8	67	6.5	72	6.1	75	5.7	68	6.1	73	5.9	76	5.5	80
85							55	8.0	61	7.3	65	6.6	65	6.2	70	6.0	73	5.5	66	5.8	71	5.5	74	5.3	85
90							53	7.1	59	7.1	63	6.5	64	6.0	69	5.8	72	5.4	65	5.4	70	5.4	73	5.1	90
95							51	6.2	57	6.8	60	6.3	62	5.7	67	5.5	70	5.2	63	5.0	68	5.1	71	5.0	95
100							48	5.4	54	6.3	57	6.1	60	5.3	65	5.2	68	5.0	62	4.5	66	4.7	70	4.8	100
110							42	4.2	48	4.8	51	5.3	56	4.1	61	4.7	64	4.7	58	3.9	62	4.1	66	4.3	110
120							36	3.1	41	3.7	44	3.9	52	3.0	56	3.7	59	4.2	54	2.9	59	3.4	62	3.6	120
130							27	2.3	33	2.5			48	2.3	52	2.7	55	3.2	50	2.1	55	2.7	58	2.9	130
140							15	1.7	23	1.8			43	1.6	47	2.1	50	2.3	46	1.4	50	1.8	53	2.3	140
150															41	1.4	43	1.6			44	1.2	46	1.4	150
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	21.0	79	16.8			79	13.2					80	11.9					30
35	51	19.8	58	18.3	64	16.1	73	19.1	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.6	52	17.1	58	15.4	71	16.4	75	14.7	78	12.9	76	12.5	79	11.4			77	11.6	80	10.7			40
45	38	16.0	45	16.1	50	14.9	68	13.7	72	13.8	75	12.3	74	11.6	77	10.9			75	10.9	78	10.2			45
50	30	13.7	37	14.1			66	11.3	70	12.2	72	11.7	73	10.8	76	10.3	78	9.4	74	10.3	77	9.7	79	9.1	50
55							63	9.3	67	10.3	70	10.8	71	9.6	74	9.7	76	9.0	72	9.2	75	9.2	77	8.6	55
60							61	7.7	65	8.6	67	9.4	70	8.1	73	9.0	75	8.5	71	7.9	74	8.6	76	8.3	60
65							58	6.3	62	7.2	64	7.9	68	6.8	70	7.7	72	8.2	69	6.8	72	7.4	74	8.0	65
70							55	5.3	59	6.0	61	6.5	66	5.7	69	6.5	71	7.0	68	5.6	70	6.4	72	6.9	70
75							52	4.4	56	5.0	58	5.4	64	4.7	67	5.4	69	5.8	66	4.6	68	5.4	70	5.8	75
80							49	3.6	53	4.2	55	4.5	62	3.8	65	4.5	67	4.9	64	3.8	67	4.4	69	4.9	80
85							46	2.9	50	3.4	52	3.8	60	3.1	63	3.8	65	4.2	62	3.1	65	3.6	67	4.0	85
90							43	2.2	46	2.7	48	3.0	58	2.6	61	3.1	63	3.4	60	2.5	63	3.1	65	3.3	90
95							40	1.7	43	2.1	44	2.3	56	2.1	59	2.5	61	2.8	58	1.9	61	2.4	63	2.8	95
100							36	1.2	39	1.6	40	1.8	53	1.6	56	2.0	58	2.3	56	1.4	59	1.8	60	2.3	100
110																	53	1.3					56	1.3	110
120																									120
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 27,558 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	10.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	9.9	74	9.1	79	7.6	74	7.7	79	7.5			75	7.3					55
60	42	8.1	52	7.7	60	7.2	67	8.6	73	8.8	78	7.5	73	7.6	78	7.2			74	7.2	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	7.2	70	8.4	75	7.3	71	7.1	76	6.9			72	6.9	77	6.6			65
70	31	7.1	41	7.1	46	6.9	62	6.0	68	7.3	73	7.1	70	6.2	75	6.5			71	6.0	76	6.3	80	5.9	70
75	23	6.5	32	7.0	37	6.7	60	5.0	66	6.3	71	6.8	68	5.2	73	6.1	77	5.9	69	5.0	74	5.9	78	5.6	75
80	14	6.0	21	6.8			58	4.2	63	5.3	68	6.2	67	4.2	72	5.5	75	5.7	68	4.2	73	5.3	76	5.5	80
85							55	3.6	61	4.5	65	5.3	65	3.6	70	4.7	73	5.5	66	3.6	71	4.5	74	5.3	85
90							53	2.9	59	3.8	63	4.5	64	2.9	69	4.0	72	4.7	65	2.9	70	3.8	73	4.7	90
95							51	2.3	57	3.2	60	3.8	62	2.3	67	3.3	70	4.0	63	2.3	68	3.2	71	4.0	95
100							48	1.9	54	2.7	57	3.1	60	1.9	65	2.7	68	3.4	62	1.8	66	2.7	70	3.4	100
110									48	1.7	51	2.1			61	1.7	64	2.4			62	1.7	66	2.4	110
120																	59	1.4					62	1.4	120
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	21.0	79	16.8			79	13.2					80	11.9					30
35	51	19.8	58	18.3	64	16.1	73	19.1	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.6	52	17.1	58	15.4	71	17.7	75	14.7	78	12.9	76	12.5	79	11.4			77	11.6	80	10.7			40
45	38	16.0	45	16.1	50	14.9	68	16.3	72	13.8	75	12.3	74	11.6	77	10.9			75	10.9	78	10.2			45
50	30	14.6	37	15.3			66	14.3	70	13.1	72	11.7	73	10.9	76	10.3	78	9.4	74	10.3	77	9.7	79	9.1	50
55							63	12.1	67	12.3	70	11.2	71	10.2	74	9.8	76	9.0	72	9.7	75	9.2	77	8.6	55
60							61	10.0	65	11.1	67	10.6	70	9.5	73	9.4	75	8.5	71	9.1	74	8.8	76	8.3	60
65							58	8.4	62	9.5	64	9.8	68	8.7	70	8.9	72	8.2	69	8.5	72	8.4	74	8.0	65
70							55	7.1	59	7.9	61	8.4	66	7.4	69	8.1	71	7.9	68	7.3	70	7.8	72	7.6	70
75							52	6.0	56	6.6	58	7.1	64	6.2	67	7.1	69	7.3	66	6.2	68	6.9	70	7.1	75
80							49	4.9	53	5.5	55	6.1	62	5.1	65	5.9	67	6.5	64	5.1	67	5.9	69	6.4	80
85							46	4.0	50	4.7	52	4.9	60	4.4	63	4.9	65	5.4	62	4.2	65	4.9	67	5.4	85
90							43	3.2	46	3.7	48	4.1	58	3.6	61	4.2	63	4.7	60	3.4	63	4.2	65	4.5	90
95							40	2.5	43	3.0	44	3.2	56	2.9	59	3.4	61	3.9	58	2.8	61	3.4	63	3.7	95
100							36	2.0	39	2.4	40	2.4	53	2.3	56	2.7	58	3.1	56	2.3	59	2.7	60	2.9	100
110									29	1.4			49	1.4	52	1.7	53	1.9	52	1.3	49	1.7	56	1.9	110
120																	47	1.2					51	1.2	120
130																									130
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	10.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	10.6	74	9.1	79	7.6	74	7.7	79	7.5			75	7.3					55
60	42	8.1	52	7.7	60	7.2	67	10.4	73	8.8	78	7.5	73	7.7	78	7.2			74	7.3	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	9.4	70	8.4	75	7.3	71	7.7	76	6.9			72	7.3	77	6.6			65
70	31	7.1	41	7.1	46	6.9	62	7.9	68	8.1	73	7.1	70	7.3	75	6.5			71	6.8	76	6.3	80	5.9	70
75	23	6.5	32	7.0	37	6.7	60	6.6	66	7.7	71	7.0	68	6.5	73	6.3	77	5.9	69	6.2	74	6.1	78	5.6	75
80	14	6.0	21	6.8			58	5.6	63	7.0	68	6.8	67	5.6	72	6.1	75	5.7	68	5.5	73	5.9	76	5.5	80
85							55	4.9	61	5.8	65	6.6	65	4.9	70	6.0	73	5.5	66	4.7	71	5.5	74	5.3	85
90							53	4.2	59	5.1	63	5.8	64	4.1	69	5.2	72	5.4	65	4.0	70	5.0	73	5.1	90
95							51	3.4	57	4.4	60	5.0	62	3.3	67	4.4	70	5.0	63	3.3	68	4.4	71	4.9	95
100							48	2.7	54	3.7	57	4.1	60	2.7	65	3.8	68	4.5	62	2.7	66	3.7	70	4.4	100
110							42	1.9	48	2.4	51	2.8	56	1.7	61	2.6	64	3.1	58	1.7	62	2.4	66	3.1	110
120									41	1.6	44	1.8			56	1.6	59	2.1			59	1.6	62	2.1	120
130																	55	1.2					58	1.2	130
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	21.4					80	13.2											25
30	57	22.4	64	19.5	70	17.1	75	17.1	79	16.8			79	13.2					80	11.9					30
35	51	17.5	58	18.0	64	16.1	73	13.9	77	15.2	80	13.7	78	12.5					78	11.9					35
40	45	14.0	52	14.9	58	15.1	71	11.2	75	12.7	78	12.8	76	10.4	79	11.3			77	10.2	80	10.7			40
45	38	11.5	45	12.2	50	12.6	68	9.0	72	10.4	75	11.3	74	8.7	77	9.8			75	8.5	78	9.5			45
50	30	9.5	37	10.0			66	7.1	70	8.3	72	9.2	73	7.1	76	8.2	78	8.9	74	7.9	77	8.0	79	8.7	50
55							63	5.5	67	6.6	70	7.4	71	5.8	74	6.8	76	7.7	72	5.8	75	6.7	77	7.6	55
60							61	4.2	65	5.3	67	6.0	70	4.7	73	5.5	75	6.4	71	4.6	74	5.5	76	6.4	60
65							58	3.2	62	4.1	64	4.8	68	3.7	70	4.5	72	5.0	69	3.5	72	4.3	74	5.0	65
70							55	2.5	59	3.2	61	3.7	66	2.8	69	3.5	71	4.1	68	2.7	70	3.5	72	4.1	70
75							52	1.8	56	2.4	58	2.8	64	2.0	67	2.7	69	3.3	66	2.0	68	2.7	70	3.3	75
80									53	1.6	55	2.0	62	1.4	65	2.0	67	2.5	64	1.4	67	2.0	69	2.5	80
85									50	1.1	52	1.4			63	1.4	65	1.8			65	1.4	67	1.8	85
90																	63	1.3					65	1.1	90
95																									95
100																									100
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 13,228 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 14.44 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.5	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	9.4	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	7.9	76	9.3			75	7.0					76	6.7					50
55	47	8.8	57	8.1	65	7.4	68	6.4	74	8.3	79	7.6	74	6.1	79	7.4			75	5.9					55
60	42	7.7	52	7.7	60	7.2	67	5.1	73	6.8	78	7.4	73	5.1	78	6.6			74	4.9	79	6.4			60
65	37	6.7	47	7.3	54	7.1	64	4.1	70	5.5	75	6.7	71	4.1	76	5.6			72	3.9	77	5.4			65
70	31	5.9	41	6.4	46	6.6	62	3.2	68	4.6	73	5.6	70	3.2	75	4.6			71	3.0	76	4.6	80	5.6	70
75	23	5.1	32	5.5	37	6.1	60	2.5	66	3.7	71	4.6	68	2.5	73	3.7	77	4.8	69	2.3	74	3.7	78	4.8	75
80	14	4.5	21	4.6			58	1.9	63	2.9	68	3.8	67	1.8	72	2.9	75	4.0	68	1.6	73	2.9	76	4.0	80
85							55	1.4	61	2.2	65	2.9	65	1.1	70	2.2	73	3.1			71	2.2	74	3.1	85
90									59	1.7	63	2.4			69	1.7	72	2.6			70	1.7	73	2.5	90
95									57	1.2	60	1.8			67	1.2	70	2.0			68	1.2	71	1.9	95
100											57	1.1					68	1.3					70	1.4	100
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 0 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 29.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						Fly jib 29.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	76	23.1																							10
12	74	23.1																							12
14	72	23.1	79	23.1																					14
16	70	23.1	78	23.1			81	23.1																	16
18	69	23.1	77	23.1			80	23.1																	18
20	67	23.1	75	23.0	81	19.5	79	23.1																	20
25	62	23.1	69	21.1	76	18.2	77	22.6					80	13.2											25
30	57	22.6	64	19.5	70	17.1	75	20.3	79	16.8			79	13.2					80	11.9					30
35	51	19.8	58	18.3	64	16.1	73	16.2	77	15.7	80	13.7	78	13.2					78	11.9					35
40	45	17.2	52	16.9	58	15.4	71	13.2	75	14.5	78	12.9	76	12.1	79	11.4			77	11.5	80	10.7			40
45	38	13.9	45	14.5	50	14.9	68	11.4	72	12.7	75	12.3	74	9.9	77	10.9			75	9.6	78	10.2			45
50	30	11.6	37	12.2			66	9.0	70	10.4	72	10.9	73	8.7	76	9.4	78	9.4	74	8.0	77	9.0	79	9.1	50
55							63	6.9	67	8.3	70	9.1	71	7.4	74	8.0	76	8.8	72	6.9	75	7.9	77	8.5	55
60							61	5.3	65	6.5	67	7.2	70	5.9	73	6.8	75	7.7	71	5.9	74	6.8	76	7.7	60
65							58	4.3	62	5.0	64	5.7	68	4.6	70	5.5	72	6.3	69	4.6	72	5.5	74	6.3	65
70							55	3.2	59	3.8	61	4.6	66	3.5	69	4.4	71	5.1	68	3.4	70	4.4	72	5.1	70
75							52	2.3	56	2.9	58	3.6	64	2.6	67	3.4	69	4.1	66	2.5	68	3.4	70	4.1	75
80							49	1.6	53	2.3	55	2.7	62	1.9	65	2.5	67	3.1	64	1.8	67	2.5	69	3.1	80
85							46	1.1	50	1.6	52	1.8	60	1.4	63	1.8	65	2.3	62	1.1	65	1.8	67	2.3	85
90															61	1.3	63	1.7			63	1.1	65	1.7	90
95																	61	1.2					63	1.2	95
100																									100
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

Counterweight 0 lbs

Lifting capacities in 1,000 lbs according per SAE J765 on fly jib 52.5 ft
On outriggers, 360° working area
Outrigger base 21.00 ft

Working Radius (ft)	Boom length 36.1 ft						Boom length 36.1 ft to 98.8 ft						Boom length 36.1 ft to 136.5 ft						Boom length 36.1 ft to 144.4 ft						Working Radius (ft)
	Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						Fly jib 52.5 ft offset						
	0°		20°		40°		0°		20°		40°		0°		20°		40°		0°		20°		40°		
	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	°	L	
10	79	17.4																							10
12	78	17.4																							12
14	76	17.4																							14
16	75	17.4																							16
18	74	17.1																							18
20	73	16.7					81	10.6																	20
25	70	15.2					79	10.6																	25
30	67	13.8	77	11.2			77	10.6					81	7.7					81	7.3					30
35	63	12.6	74	10.5			75	10.6					79	7.7					80	7.3					35
40	59	11.6	70	9.6	79	8.6	74	10.6	80	10.1			78	7.7					79	7.3					40
45	55	10.5	66	9.1	75	8.2	72	10.6	78	9.8			76	7.7					77	7.3					45
50	51	9.7	61	8.6	70	7.7	70	9.6	76	9.4			75	7.7					76	7.3					50
55	47	8.8	57	8.1	65	7.4	68	8.1	74	9.0	79	7.6	74	7.3	79	7.5			75	6.8					55
60	42	8.1	52	7.7	60	7.2	67	6.4	73	8.3	78	7.5	73	6.4	78	7.2			74	5.8	79	6.8			60
65	37	7.6	47	7.3	54	7.1	64	5.0	70	6.8	75	7.3	71	5.0	76	6.9			72	5.0	77	6.6			65
70	31	6.9	41	7.1	46	6.9	62	4.1	68	5.6	73	6.7	70	4.1	75	5.7			71	3.8	76	5.6	80	5.9	70
75	23	6.1	32	6.5	37	6.7	60	3.2	66	4.6	71	5.7	68	3.2	73	4.6	77	5.6	69	2.9	74	4.6	78	5.4	75
80	14	5.3	21	5.5			58	2.3	63	3.7	68	4.6	67	2.3	72	3.8	75	4.9	68	2.3	73	3.8	76	4.9	80
85							55	1.8	61	2.7	65	3.8	65	1.8	70	2.9	73	4.0	66	1.6	71	2.9	74	4.0	85
90							53	1.3	59	2.2	63	3.0	64	1.3	69	2.2	72	3.2			70	2.2	73	3.2	90
95									57	1.7	60	2.2			67	1.7	70	2.4			68	1.6	71	2.4	95
100									54	1.2	57	1.6			65	1.2	68	1.8					70	1.8	100
Telescoping sequence %																									
Tel. 1	0						93						93						100						Tel. 1
Tel. 2	0						46						93						100						Tel. 2
Tel. 3	0						46						93						100						Tel. 3
Tel. 4	0						46						93						100						Tel. 4

WARNING AND OPERATING INSTRUCTIONS FOR LIFTING CAPACITIES ATF65G-4

GENERAL

1. Total rated loads shown on the TADANO LOAD RATING CHART apply only to the machine as originally manufactured and normally equipped by TADANO. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Hydraulic cranes can be hazardous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the ***Operation and Maintenance Manual*** supplied with the machine. If this manual is missing, order a replacement through the distributor.
3. The operator and other personnel associated with this machine shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) safety standards for cranes.

SET UP

1. Total rated loads shown on the TADANO LOAD RATING CHART are the maximum allowable crane capacities. They are based on the machine standing level on firm supporting surface under ideal job conditions. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats to spread the load to a larger _ surface.
2. For on outrigger operation, outriggers shall be extended to the dimension according to the TADANO LOAD RATING CHART and secured by pins with tires free of supporting surface, before operating crane.

OPERATION

1. Total rated loads with outriggers fully extended do not exceed 85% of the tipping loads. Total rated loads with outriggers half extended are determined by this formula:
   total rated load = (tipping load -0,1 tip reaction) / 1.25.
2. The crane's structural steelwork is in accordance with DIN 15018, part 3. Design and construction of the crane comply with DIN 15018, part 2 and with F.E.M. regulations.
3. Total rated loads include the weight of the main hook block, auziliary hook ball, sling and other auxiliary lifting devices and all their weight shall be subtracted from the listed capacities to obtain the net load to be lifted.

Hookball / Hookblock (ton)	6.6	13.8		35.3				55.1			
No. of parts of line	1	2	3	4	5	6	7	8	9	10	11
Max. lifting capacity (ton)	4.8	9.7	13.8	19.4	24.5	29.4	34.3	39.2	44.1	49	53.9
Weight (lbs)	330	375		660				1,050			

88.2			
12	13	14	15
58.8	63.7	68.6	75
1,433			

4. Total rated loads are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, operating speeds, side loads, etc. Side pull on the boom or jib is extremely dangerous.
5. Total rated loads do not account for wind on lifted load or boom. Total rated loads and boom length shall be appropriately reduced, when wind velocity is above 22 mph (32 ft/sec.).
6. Total rated loads at load radius shall not be exceeded. Do not tip the crane to determine allowable loads.
   Do not operate at boom lengths beyond radius or boom angles
7. where no capacities are shown. Crane may overturn without any load on the hook.
8. Slewing of the superstructure is admissible only when the crane is supported on half or fully extended outriggers.
9. The lifting capacity ratings specified in the TADANO LOAD RATING CHART apply to the telescopic boom without fly jib fixed in transport position or working position. If the fly jib is secured to the telescopic boom in transport position or working position, the lifting capacities of the telescopic boom are reduced by the values specified below. The weight of the fly jib (2,500 lbs) is detected in terms of a load, and the load moment limiter will shut off earlier.
   29.5 ft / 52.5 ft. fly jib, mounted in transport position :900 lbs
   29.5 ft. fly jib, mounted to the boom head :2,200 lbs
   52.5 ft. fly jib, mounted to the boom head :3,310 lbs
10. When making lifts at a load radius not shown, use the next longer radius to determine allowable capacity.
11. Load per part line should not exceed 10,000 lbs. for the main winch and for the auxiliary winch.
12. Loaded boom angles are approximate. The boom angle before loading should be greater to account for deflection.
13. Extension or retraction of the telescopic boom with loads may be attempted within the limits of the TADANO LOAD RATING CHART. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, crane maintenance, etc.
14. When erecting or stowing the extendible fly jib, be sure to retain it by hand or by other means to prevent its free movement. Use the Anti-Two Block (OVERWIND CUTOUT) disable switch
15. When erecting or stowing the extendible fly jib and stowing the hook block. While the switch is pushed, the hoist will not stop, even when an overwind condition occurs.
16. The working radius specified in the TADANO LOAD RATING CHARTS for the extendible fly jib apply only if the telescopic boom is extended according to the TADANO LOAD RATING CHARTS. If one or more elements of the telescopic boom are retracted partially or completely, the specified boom angles will be decisive in determining total rated lifting capacities.
17. When lifting a load by using the extendible fly jib (auxiliary hoist) and telescopic boom (main hoist) simultaneously, do the following:
    A. Select the correct program for the load moment device in accordance with jib length, jib offset angle, counterweight and outrigger base.
    B. Before starting the operation, make sure that the weight of the load is within the total rated load for the extendible fly jib.
18. Working with Single Top
    Operation with the single top is allowed with the main winch and the auxiliary winch (2nd winch). The maximum allowed capacity is limited by the selected S.L.I. code for main boom operation according to existing counterweight and outrigger base at one side and by the single line pull which is limited by hydraulic pressure at the other side.

    For operations with the single top mounted, use the TADANO LOAD RATING CHART for the telescopic boom in accordance with existing counterweight and outrigger base to find the total rated lifting capacity and also select the correct S.L.I. code for the telescopic boom in accordance with the existing counterweight and outrigger base. Find the total rated lifting capacity based on boom length and working radius. From that value, subtract 1,100 lbs and the weights of all lifting equipment used including hook block, sling and other auxiliary lifting devices. The result (<total rated lifting capacity> - <1,100 lbs> - <lifting equipment>) is the total rated lifting capacity for a single top lift.

19. Working with Auxiliary Winch
The weight of the auxiliary winch is taken into account as a part of counterweight. Therefore the auxiliary winch must be always attached to the superstructure for crane working. In case that the auxiliary winch is disassembled from superstructure, the 2 counterweight pieces each with 0.44 tons have to be attached to the superstructure instead of auxiliary winch.

Definitions

1. Load Radius:
Horizontal distance from a projection of the axis of rotation to supporting surface before loading to the center of the vertical hoist line or tackle with load applied. The deflection of the boom due to its deadweight and the rated load are taken into account.
2. Loaded Boom Angle:
The angle between the boom base section and the horizontal, after lifting the total rated load at the working radius.
3. Working Area:
Area measured in a circular arc about the centerline of rotation.
4. Freely Suspended Load:
Load hanging free with no direct external force applied except by the hoist line.
5. Side Load:
Horizontal side force applied to the lifted load either on the ground or in the air.

WARNING AND OPERATING INSTRUCTIONS FOR ON TIRE CAPACITIES

1. Total rated lifting capacities on tires are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J-765.
2. Total rated lifting capacities shown in the TADANO LOAD RATING CHART are based on the condition that the crane is set on firm level supporting surfaces with suspension let down to block. Those above the bold lines are based on tire capacity and those below the bold lines on crane stability. They are based on actual load radius increased by tire deformation and boom deflection.
3. Total rated lifting capacities are based on proper tire inflation, capacity and condition. Damaged tires are hazardous to safe operation of the crane.
4. Tires shall be inflated to correct air pressure
Tire Air Pressure
14.00 R 25 - 145 psi (10 kgf/cm^2)
16.00 R 25 - 130 psi (9 kgf/cm^2)
20.5 R 25 - 100 psi (7 kgf/cm^2)
5. On tire lifting with "fly jib" is not permitted.
6. When making a lift on tires, set the parking brake.
7. Traveling with the load is permitted only if the following conditions exist:
Machine is set on firm level supporting surface; tires inflated to specified pressure; boom must be centered over the rear of the machine; superstructure swing lock pin engaged; slewing brake engaged; maximum boom length not to exceed 61.4 ft; lifted load kept as close to the ground as possible and fastened to the chassis to prevent the lifted load from swinging or oscillating; travel slowly with a creeping speed not to exceed 1 mph; and especially avoid any abrupt steering, accelerating or braking.
If possible, extend the outriggers and lower the outrigger floats to just above ground level.
8. Do no operate the crane while carrying the load.

Safe Load Indicator

The Safe Load Indicator is intended as an aid to the operator. Under no condition should it be relied upon to replace use of Load Rating Charts and Operating Instructions. Sole reliance upon the Safe Load Indicator Aids in place of good operating practice can cause an accident. The operator must exercise caution to assure safety.

ATF65G-4 Axle weight distribution chart

		GVW	Axle 1	Axle 2	Axle 3	Axle 4
Base machine with 16.00R25 tires, 8x6 drive, no counterweight		73,138	20,714	21382	16,122	14,920
Add:	1. 35.3 ton hook block in storage box	662	127	127	204	204
	2. 13.8 ton hook ball in storage box	386	74	74	119	119
	3. 6.6 ton hook ball in storage box	332	83	83	83	83
	4. 29.5 ft/ 52.5 ft fly jib	2,742	1,905	1,905	-534	-534
	5. 5.3 ft short jib	726	877	877	-514	-514
	6. Auxiliary winch with cable	1,630	-741	-741	1,556	1,556
	7. Auxillary boom point sheave (single top)	132	169	169	-103	-103
	8. Additional oil cooler	88	-18	-18	62	62
	9. Air conditioning at crane cab	106	-1	-1	54	54
	10.20.5R25 tyres in lieu of 16.00R25	660	165	165	165	165
	11.8x8 drive	617	522	95	0	0
	12.Towing attachment	176	-67	-67	155	155
	13.Tool box at rear	278	-103	-103	241	241
	1. Counterweight at upper (0.4t x2) * Not in combination with Aux.winch	1,728	-583	-583	1,447	1,447
	2. Counterweight at upper (3.1t)	6,904	-2,328	-2,328	5,780	5,780
	3. Counterweight at upper (2.0t)	4,330	-1,462	-1,462	3,627	3,627
	4. Counterweight at upper (0.1t x2)	446	-150	-150	373	373
	5. Counterweight at carrier (0.4t)	926	455	455	8	8
	6. Counterweight at carrier (4.0t)	8,818	4,184	4,184	225	225
	7. Counterweight at carrier (2.0t)	176	2,100	2,100	196	106
	8. Counterweight at carrier (2.5t)	5,310	2,529	2,529	126	126

MEMO

TADANO AMERICA CORPORATION

333 NORTHPARK CENTRAL DR, SUITE Z
HOUSTON, TEXAS 77073 U.S.A.
PHONE: (281) 869-0030 EXT.315
FAX: (281) 869-0040
Web site: www.tadanoamerica.com/
E-mail: sales@tadano-cranes.com

Form No. TAC-ATF65G-4-060124

9. Activity Hazard Analysis

Activity Hazard Analysis (AHA)

Activity/Work Task: Non Critical Crane Lift	Overall Risk Assessment Code (RAC) (Use highest code)
Project Location: Seamens Neck Road, Bethpage, NY	
Contract Number: N62470-08-D-1006	
Date Prepared: 3/23/12	
Prepared by (Name/Title): Randy Grogan, Superintendent	
Reviewed by (Name/Title): Don Conger QC/Safety	
Notes: (Field Notes, Review Comments, etc.)	

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Step 1: Review each **"Hazard"** with identified safety **"Controls"** and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

- E = Extremely High Risk
- H = High Risk
- M = Moderate Risk
- L = Low Risk

Job Steps	Hazards	Controls	RAC
Position crane and look for obstructions to lift	Wind and lightning storm	Check weather and make sure their are no storms predicted	L
Crane and operator inspection	Power lines	Stop operation if winds exceed manufacturer recommended limits of 22 MPH	M
Safety briefing	Trees and branches	Walk site are and make sure radius and height are not affected by power lines or trees	L
Set up rigging	Pinch points	All nonessential personnel stay well back from lift and within sight of operator and flag person	L
Position trailers with tanks	Overhead lifts	Only one person to flag or signal operator with proper signals	L
Attach rigging to tanks	Crane swing radius	Stay away from pinch points, radius of swing and out from under lifting or lowering loads	M
Lift tanks horizontally from trailers place on ground	Slips, trips and falls		
Trip tanks to vertical with crane	Clear field of vision for operator and ground personnel		
Rig tanks for vertical lift and position on slab	Proper hand signals		
Use ladder to release rigging from top of tank			

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
Tadano ATF-65G Crane New and tagged inspected, Slings and cables, shackles	New York Crane Operators License or Certificate Back up or relief operator will be qualified person as well as flag man	Equipment inspection by operator on site NAVFAC inspection by client Representative on site or at yard Review of crane lift plan on site by NAVFAC and Prime and sub-contractors

10. Certificate of Compliance

CERTIFICATE OF COMPLIANCE

This certificate shall be signed by an official of the company that provides cranes (or multi-purpose machines, material handling equipment, or construction equipment used to lift loads suspended by rigging gear) or rigging gear for any application under this contract. Post a completed certificate on each crane or alternate machine (or in the contractor's on-site office for rigging operations) brought onto Navy property.

CONTRACTING OFFICER'S POINT OF CONTACT (Government Representative)	PHONE
Greg Pearman (NAVFAC)	860-235-2040
PRIME CONTRACTOR/PHONE	**CONTRACT NUMBER**
Randy Grogan AGVIQ Construction	N62470-08-D-1006
CRANE OR ALTERNATE MACHINE SUPPLIER/PHONE (if different from prime contractor)	**CRANE OR ALTERNATE MACHINE NUMBER (i.e., ID number)**
Phillip Ross Ind Inc	

CRANE OR ALTERNATE MACHINE MANUFACTURER/TYPE/CAPACITY

TadanoFaun ATF65G4 - 75 ton

CRANE OR ALTERNATE MACHINE OPERATOR'S NAME(S)

Jason Scheffer / Randall H. Hills

I certify that

1. The above noted crane or alternate machine and associated rigging gear conform to applicable OSHA regulations (host country regulations for naval activities in foreign countries) and applicable ASME B30 standards. The following OSHA regulations and ASME standards apply:_____
2. The operators noted above have been trained and are qualified for the operation of the above noted crane(s) or alternate machine(s).
3. The operators noted above have been trained not to bypass safety devices during lifting operations.
4. The operators, riggers and company officials are aware of the actions required in the event of an accident as specified in the contract.

COMPANY OFFICIAL SIGNATURE	DATE
	March 22 12

COMPANY OFFICIAL NAME/TITLE

Phillip Carlucci President

POST ON CRANE (OR ALTERNATE MACHINE)

(IN CAB OR VEHICLE)

(or in the contractor's on-site office for rigging operations)

11. Operator Certifications

NEW YORK STATE

COMMERCIAL DRIVER LICENSE

ID: 553 809 079 CLASS B

SCHEFFER
JASON,W
15 SYLVESTER CT
ROCKY POINT NY 11778
DOB: 02-09-74
SEX M EYES HA HT 6-00
E NONE
R NONE
ISSUED 02-24-11 EXPIRES 02-09-19

International Union of Operating Engineers

Jason Scheffer

has successfully completed a 10-hour
Occupational Safety and Health Training Course in

CONSTRUCTION SAFETY & HEALTH

Completion Date: **05/21/2008**

The passing participant's OSHA 10-Hour Construction Safety & Health completion card has been applied for. This is a temporary completion card provided immediately upon successful completion of the course.

STATE OF NEW YORK - DEPARTMENT OF LABOR
CRANE OPERATOR CERTIFICATE OF COMPETENCE

JASON W SCHEFFER

CLASS A
UNRESTRICTED

STATE OF NEW YORK · DEPARTMENT OF LABOR

CERT# 03-0002
EXPIRES 04/12
MUST BE CARRIED WHEN OPERATING CRANE

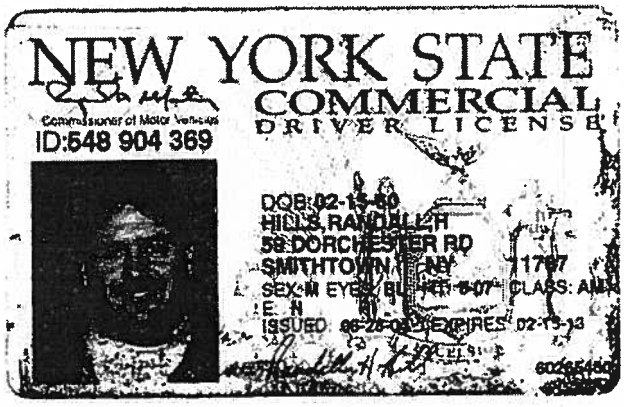
INTERNATIONAL UNION OF OPERATING ENGINEERS
LOCAL 138 • 138A • 138B
POWERED INDUSTRIAL TRUCKS

247-C

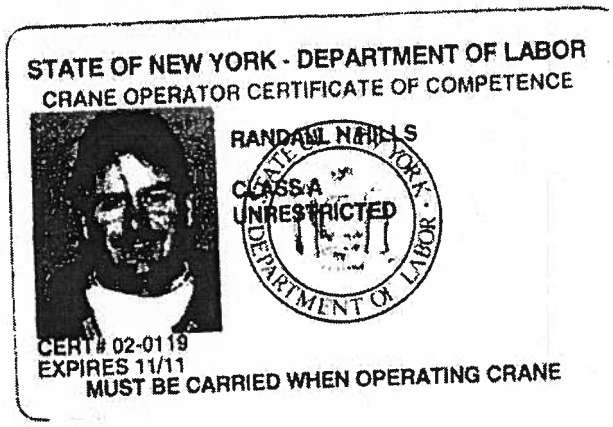
Jason Scheffer
NAME

has had 1910.178 Forklift Training

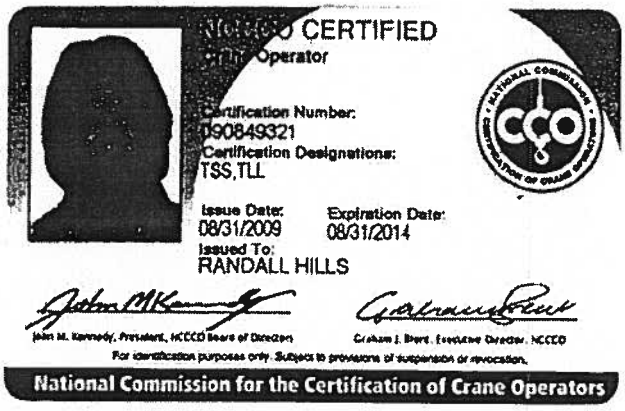
by _____ 9/25/09
DIRECTOR OF TRAINING DATE



NEW YORK STATE
COMMERCIAL
DRIVER LICENSE
Commissioner of Motor Vehicles
ID:548 904 369
DOB:02-15-50
HILLS,RANDALL,H
58 DORCHESTER RD
SMITHTOWN NY 11787
SEX:M EYES:BL HGT:6-07 CLASS:AM
E N
ISSUED 06-28-02 EXPIRES 02-15-13

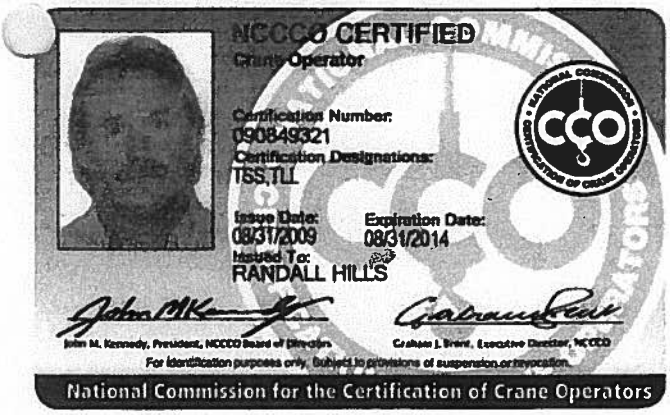


STATE OF NEW YORK - DEPARTMENT OF LABOR
CRANE OPERATOR CERTIFICATE OF COMPETENCE
RANDALL N HILLS
CLASS A
UNRESTRICTED
STATE OF NEW YORK · DEPARTMENT OF LABOR
CERT# 02-0119
EXPIRES 11/11
MUST BE CARRIED WHEN OPERATING CRANE



NCCCO CERTIFIED
Crane Operator
Certification Number:
090849321
Certification Designations:
TSS,TLL
Issue Date:
08/31/2009
Expiration Date:
08/31/2014
Issued To:
RANDALL HILLS
John M. Kennedy, President, NCCCO Board of Directors
Graham J. Brent, Executive Director, NCCCO
For identification purposes only. Subject to provisions of suspension or revocation.
National Commission for the Certification of Crane Operators

Hoist Machine Operator
ISSUE DATE: 10/14/2009


NCCCO CERTIFIED
Crane Operator
Certification Number:
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TSS,TLL
Issue Date:
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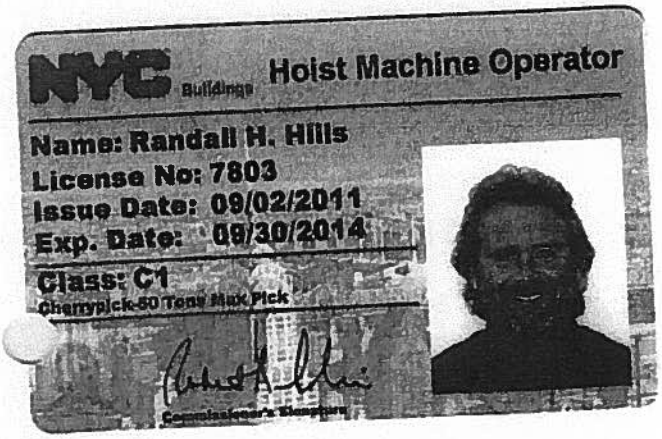
Graham J. Brent, Executive Director, NCCCO
For identification purposes only. Subject to provisions of suspension or revocation.
National Commission for the Certification of Crane Operators


STATE OF NEW YORK - DEPARTMENT OF LABOR
CRANE OPERATOR CERTIFICATE OF COMPETENCE
RANDALL H. HILLS
CLASS A
UNRESTRICTED
CERT# 02-0119
EXPIRES 11/14
MUST BE CARRIED WHEN OPERATING CRANE


NYC Buildings
Hoist Machine Operator
Name: Randall H. Hills
License No: 7803
Issue Date: 09/02/2011
Exp. Date: 09/30/2014
Class: C1
Cherrypick-50 Tons Max Pick
Commissioner's Signature

Form W-4 (2012)

Purpose. Complete Form W-4 so that your employer can withhold the correct federal income tax from your pay. Consider completing a new Form W-4 each year and when your personal or financial situation changes.

Exemption from withholding. If you are exempt, complete only lines 1, 2, 3, 4, and 7 and sign the form to validate it. Your exemption for 2012 expires February 18, 2013. See Pub. 505, Tax Withholding and Estimated Tax.

Note. If another person can claim you as a dependent on his or her tax return, you cannot claim exemption from withholding if your income exceeds $950 and includes more than $300 of unearned income (for example, interest and dividends).

Basic instructions. If you are not exempt, complete the Personal Allowances Worksheet below. The worksheets on page 2 further adjust your withholding allowances based on itemized deductions, certain credits, adjustments to income, or two-earners/multiple jobs situations.

Complete all worksheets that apply. However, you may claim fewer (or zero) allowances. For regular wages, withholding must be based on allowances you claimed and may not be a flat amount or percentage of wages.

Head of household. Generally, you can claim head of household filing status on your tax return only if you are unmarried and pay more than 50% of the costs of keeping up a home for yourself and your dependent(s) or other qualifying individuals. See Pub. 501, Exemptions, Standard Deduction, and Filing Information, for information.

Tax credits. You can take projected tax credits into account in figuring your allowable number of withholding allowances. Credits for child or dependent care expenses and the child tax credit may be claimed using the **Personal Allowances Worksheet** below. See Pub. 505 for information on converting your other credits into withholding allowances.

Nonwage income. If you have a large amount of nonwage income, such as interest or dividends, consider making estimated tax payments using Form 1040-ES, Estimated Tax for Individuals. Otherwise, you may owe additional tax. If you have pension or annuity income, see Pub. 505 to find out if you should adjust your withholding on Form W-4 or W-4P.

Two earners or multiple jobs. If you have a working spouse or more than one job, figure the total number of allowances you are entitled to claim on all jobs using worksheets from only one Form W-4. Your withholding usually will be most accurate when all allowances are claimed on the Form W-4 for the highest paying job and zero allowances are claimed on the others. See Pub. 505 for details.

Nonresident alien. If you are a nonresident alien, see Notice 1392, Supplemental Form W-4 Instructions for Nonresident Aliens, before completing this form.

Check your withholding. After your Form W-4 takes effect, use Pub. 505 to see how the amount you are having withheld compares to your projected total tax for 2012. See Pub. 505, especially if your earnings exceed $130,000 (Single) or $180,000 (Married).

Future developments. The IRS has created a page on IRS.gov for information about Form W-4, at *www.irs.gov/w4*. Information about any future developments affecting Form W-4 (such as legislation enacted after we release it) will be posted on that page.

Personal Allowances Worksheet (Keep for your records.)

A	Enter "1" for yourself if no one else can claim you as a dependent	A	1
B	Enter "1" if: • You are single and have only one job; or • You are married, have only one job, and your spouse does not work; or • Your wages from a second job or your spouse's wages (or the total of both) are $1,500 or less.	B	
C	Enter "1" for your spouse. But, you may choose to enter "-0-" if you are married and have either a working spouse or more than one job. (Entering "-0-" may help you avoid having too little tax withheld.)	C	
D	Enter number of dependents (other than your spouse or yourself) you will claim on your tax return	D	
E	Enter "1" if you will file as head of household on your tax return (see conditions under Head of household above)	E	
F	Enter "1" if you have at least $1,900 of child or dependent care expenses for which you plan to claim a credit (Note. Do not include child support payments. See Pub. 503, Child and Dependent Care Expenses, for details.)	F	
G	Child Tax Credit (including additional child tax credit). See Pub. 972, Child Tax Credit, for more information. • If your total income will be less than $61,000 ($90,000 if married), enter "2" for each eligible child; then less "1" if you have three to seven eligible children or less "2" if you have eight or more eligible children. • If your total income will be between $61,000 and $84,000 ($90,000 and $119,000 if married), enter "1" for each eligible child	G	
H	Add lines A through G and enter total here. (Note. This may be different from the number of exemptions you claim on your tax return.) ▶	H	1

For accuracy, complete all worksheets that apply.

- If you plan to itemize or claim adjustments to income and want to reduce your withholding, see the Deductions and Adjustments Worksheet on page 2.
- If you are single and have more than one job or are married and you and your spouse both work and the combined earnings from all jobs exceed $40,000 ($10,000 if married), see the Two-Earners/Multiple Jobs Worksheet on page 2 to avoid having too little tax withheld.
- If neither of the above situations applies, stop here and enter the number from line H on line 5 of Form W-4 below.

---------- Separate here and give Form W-4 to your employer. Keep the top part for your records. ----------

Form **W-4** — Department of the Treasury, Internal Revenue Service

Employee's Withholding Allowance Certificate

▶ Whether you are entitled to claim a certain number of allowances or exemption from withholding is subject to review by the IRS. Your employer may be required to send a copy of this form to the IRS.

OMB No. 1545-0074

2012

1 Your first name and middle initial	Last name	2 Your social security number
Robert C.	Scrima	115542707

Home address (number and street or rural route)
37 Spruce Street

City or town, state, and ZIP code
West Hempstead, NY 11552

3 ☑ Single ☐ Married ☐ Married, but withhold at higher Single rate.
Note. If married, but legally separated, or spouse is a nonresident alien, check the "Single" box.

4 If your last name differs from that shown on your social security card, check here. You must call 1-800-772-1213 for a replacement card. ▶ ☐

5	Total number of allowances you are claiming (from line H above or from the applicable worksheet on page 2)	5 1
6	Additional amount, if any, you want withheld from each paycheck	6 $ 0
7	I claim exemption from withholding for 2012, and I certify that I meet both of the following conditions for exemption. • Last year I had a right to a refund of all federal income tax withheld because I had no tax liability, and • This year I expect a refund of all federal income tax withheld because I expect to have no tax liability. If you meet both conditions, write "Exempt" here ▶	7

Under penalties of perjury, I declare that I have examined this certificate and, to the best of my knowledge and belief, it is true, correct, and complete.

Employee's signature (This form is not valid unless you sign it.) ▶ Robert C. Scrima Date ▶ 1/19/12

8 Employer's name and address (Employer: Complete lines 8 and 10 only if sending to the IRS.)	9 Office code (optional)	10 Employer identification number (EIN)

OMB No. 1615-0047; Expires 08/31/12

Department of Homeland Security
U.S. Citizenship and Immigration Services

Form I-9, Employment Eligibility Verification

Read instructions carefully before completing this form. The instructions must be available during completion of this form.

ANTI-DISCRIMINATION NOTICE: It is illegal to discriminate against work-authorized individuals. Employers CANNOT specify which document(s) they will accept from an employee. The refusal to hire an individual because the documents have a future expiration date may also constitute illegal discrimination.

Section 1. Employee Information and Verification *(To be completed and signed by employee at the time employment begins.)*

Print Name: Last	First	Middle Initial	Maiden Name
Scrima	Robert	C	

Address *(Street Name and Number)*	Apt. #	Date of Birth *(month/day/year)*
37 Spruce Street		02/27/1969

City	State	Zip Code	Social Security #
West Hempstead	NY	11552	115-54-2707

I am aware that federal law provides for imprisonment and/or fines for false statements or use of false documents in connection with the completion of this form.

I attest, under penalty of perjury, that I am (check one of the following):

- [X] A citizen of the United States
- [ ] A noncitizen national of the United States (see instructions)
- [ ] A lawful permanent resident (Alien #) _____
- [ ] An alien authorized to work (Alien # or Admission #) _____ until (expiration date, if applicable - *month/day/year*) _____

Employee's Signature: Robert C. Scrima Date *(month/day/year)*: 1/19/12

Preparer and/or Translator Certification *(To be completed and signed if Section 1 is prepared by a person other than the employee.) I attest, under penalty of perjury, that I have assisted in the completion of this form and that to the best of my knowledge the information is true and correct.*

Preparer's/Translator's Signature	Print Name

Address *(Street Name and Number, City, State, Zip Code)*	Date *(month/day/year)*

Section 2. Employer Review and Verification *(To be completed and signed by employer. Examine one document from List A OR examine one document from List B and one from List C, as listed on the reverse of this form, and record the title, number, and expiration date, if any, of the document(s).)*

List A	OR	List B	AND	List C
Document title:		Driver's License		Social Security#
Issuing authority:		NYS 447-623-531		115-54-2707
Document #:				
Expiration Date *(if any)*:				
Document #:				
Expiration Date *(if any)*:				

CERTIFICATION: I attest, under penalty of perjury, that I have examined the document(s) presented by the above-named employee, that the above-listed document(s) appear to be genuine and to relate to the employee named, that the employee began employment on *(month/day/year)* _____ **and that to the best of my knowledge the employee is authorized to work in the United States. (State employment agencies may omit the date the employee began employment.)**

Signature of Employer or Authorized Representative	Print Name	Title
	Barbara Pistone	Office Manager

Business or Organization Name and Address *(Street Name and Number, City, State, Zip Code)*	Date *(month/day/year)*
Bay Crane Service of LI Inc.389 New South Rd Hicksville NY 11801	

Section 3. Updating and Reverification *(To be completed and signed by employer.)*

A. New Name *(if applicable)*	B. Date of Rehire *(month/day/year) (if applicable)*

C. If employee's previous grant of work authorization has expired, provide the information below for the document that establishes current employment authorization.

Document Title: _____ Document #: _____ Expiration Date *(if any)*: _____

I attest, under penalty of perjury, that to the best of my knowledge, this employee is authorized to work in the United States, and if the employee presented document(s), the document(s) I have examined appear to be genuine and to relate to the individual.

Signature of Employer or Authorized Representative	Date *(month/day/year)*

ATTN: Barbara 1 of 2 pages
From Rob Scrima (516)937-3672
(516)292-4404
Re: Osha & L.I.R.R. cert.

International Union of Operating Engineers

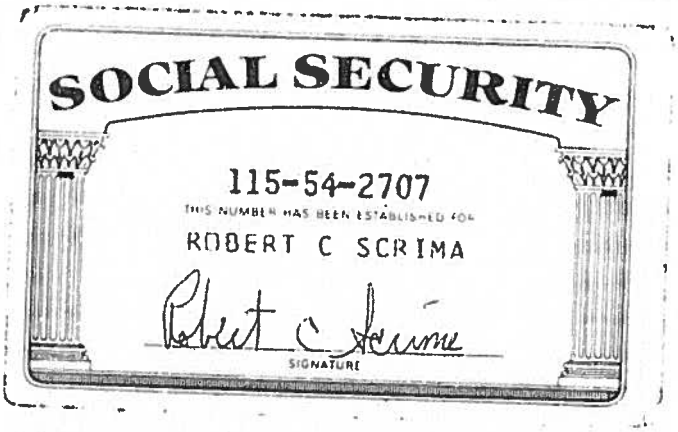
Robert Scrima

has successfully completed a 10-hour
Occupational Safety and Health Training Course in

CONSTRUCTION SAFETY & HEALTH

Completion Date: **05/07/2008**

The passing participant's OSHA 10-Hour Construction Safety & Health completion card has been applied for. This is a temporary completion card provided immediately upon successful completion of the course.



SOCIAL SECURITY

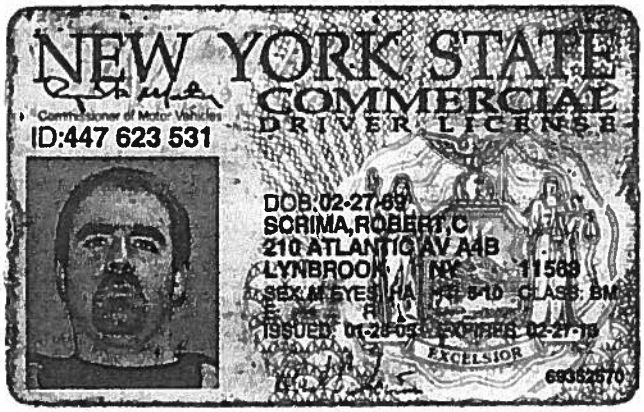
115-54-2707

THIS NUMBER HAS BEEN ESTABLISHED FOR

ROBERT C SCRIMA

Robert C Scrima

SIGNATURE



NEW YORK STATE

COMMERCIAL DRIVER LICENSE

Commissioner of Motor Vehicles

ID:447 623 531

DOB:02-27-69

SCRIMA,ROBERT,C

210 ATLANTIC AV A4B

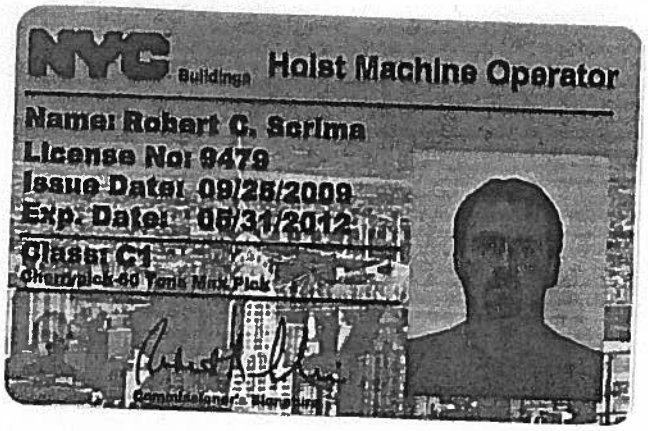
LYNBROOK NY 11563

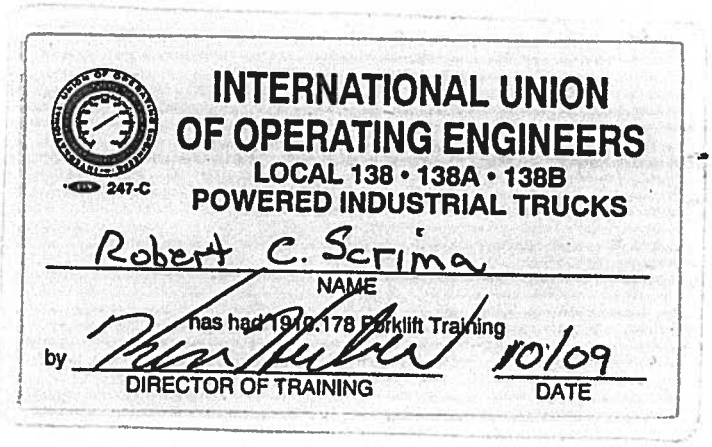
SEX:M EYES:HA HT:5-10 CLASS:BM

ISSUED: 01-28-03 EXPIRES: 02-27-08

EXCELSIOR

68352870


NYC Buildings
Hoist Machine Operator
Name: Robert C. Scrima
License No: 9479
Issue Date: 09/25/2009
Exp. Date: 08/31/2012
Class: C1
Commissioner's Signature


247-C
INTERNATIONAL UNION
OF OPERATING ENGINEERS
LOCAL 138 • 138A • 138B
POWERED INDUSTRIAL TRUCKS
Robert C. Scrima
NAME
has had 19hr. 178 Forklift Training
by
DIRECTOR OF TRAINING
10/09
DATE

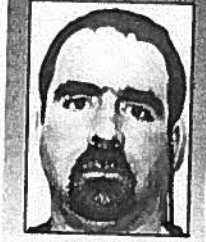

NEW YORK STATE
COMMERCIAL
DRIVER LICENSE
ID:447 623 531
DOB: 03-27-69
SCRIMA ROBERT C
210 ATLANTIC AV A4B
LYNBROOK NY 11563
SEX: M EYES: HA HGT: 5-10 CLASS: BM
ISSUED: 01-28-05 EXPIRES: 03-27-13
EXCELSIOR
69352570

Hoist Machine Operator

Name	Robert C. Scrima
Address	210 Atlantic Avenue Apt #4B
City	Lynbrook
State / Zip	NY 11663
NCCCO Designation	TSS, TLL

H009479

Robert C. Scrima



NCCCO CERTIFIED
Crane Operator

Certification Number:
090848930
Certification Designations:
TSS,TLL

Issue Date:
08/31/2009
Expiration Date:
08/31/2014

Issued To:
ROBERT C. SCRIMA

John M. Kennedy, President, NCCCO Board of Directors

Graham J. Brent, Executive Director, NCCCO

For identification purposes only. Subject to provisions of suspension or revocation.

National Commission for the Certification of Crane Operators

NYC Buildings

CHERRY PICKER

Name: Robert C. Scrima
License No: 9479
Issue Date: 05/01/2009
Exp. Date: 05/31/2012
Class: C1

12. Crane Certifications

12.1. Certificate of Unit Test and Examination of Crane

12.2. Mobile crane Inspection Evaluation

12.3. Local Acknowledgment of Attendance by Hesco

HESCO
HEAVY EQUIPMENT SERVICES COMPANY

P.O. Box 726
Niantic, CT 06357
Phone: (860) 739-4446
Fax: (860) 739-4448

CERTIFICATE OF UNIT TEST AND/OR EXAMINATION OF CRANE, DERRICK, OR OTHER MATERIAL HANDLING DEVICE

Certificate Number: 9316 **Type:** Annual **Owner's Identification:** 11

1. **Owner:** Bay Crane Service of Long Island, Inc.
   Owner's Address: 411 W. John Street **City:** Hicksville **State:** NY **Zip:** 11801
2. **Description:** Crane ☑ Derrick ☐ Other ☐
   Location: (a) Remains at Worksite ☐ (b) Changes Worksite ☑ (c) On Barge ☐
   If (a) or (c), Describe:
   Type: Hydraulic All Terrain Crane
   Manufacturer: Tadano **Model Number:** ATF65G-4 **Serial Number:** 2031132
   Maximum Rated Capacity: 150,000 lb.
3. **Service Status at Time of Survey:** **Lifting:** **Other (describe):**
4. **Boom at Time of Survey:** **Length:** 144.4' + 52.5' **Type:** Hydraulic Telescopic w/Lattice Bifold SAW
5. **Test Loads Applied (cross out if only examination conducted)**

Radius	Proof Load	Rated Load	Outriggers (yes, no)	Boom Direction (over rear, over side)
32'	12,000 lb.	X	Yes	Over Rear
X	X	X	No	X
X	X	X	No	X

   Description of Proof Load: Crane Counterweight
   Basis for Assigned Load Ratings: Functional
6. **Remarks and/or Limitations Imposed:**
7. **Indicating/Limiting Device:** **Type** **Accuracy**
   Type **Accuracy**

I CERTIFY THAT ON 12/16/2011 **THE ABOVE DEVICE WAS**

☐ **EXAMINED AND TESTED,** ☑ **EXAMINED, BY THE UNDERSIGNED OR HIS AUTHORIZED REPRESENTATIVE WHO,**

IN HIS OPINION, SAID THE UNIT MET THE REQUIREMENTS OF 1926.1400

NAME OF AUTHORIZED EXAMINER: Edward Shapiro **HESCO NUMBER:** 101

SIGNATORY AUTHORITY: Edward A. Shapiro **DATE:** 12/17/2011

EDWARD A. SHAPIRO PRESIDENT

MEMBER
CRANE CERTIFICATION ASSOCIATION OF AMERICA

P.O. Box 720
Niantic, CT. 06357

Phone: 860/739-4446
Fax: 860/739-4448

HEAVY EQUIPMENT SERVICES COMPANY

MOBILE CRANE INSPECTION EVALUATION

Customer Bay Crane Service of Long Island
Manufacturer Tadano
Model/Serial Number AFT65B-4 / 2031132
Type Hydraulic All Terrain Crane
Customer # 11
Max. Capacity 150,000 lb
Inspection Criteria ☐ 1910.180 ☐ 1919 ☑ 1926.1400
Equipment Location Hicksville, NY
Type of service at the time of survey
Boom & Jib lengths at the time of survey 144.4' + 52.5'
Boom & Jib construction Hydraulic Telescope w/ Lattice Fixed Stick

Date 12/16/11
☑ Annual
☐ Quadrennial
☐ Special
PCSA Class
Hours 5,950
Changes Worksite Yes

GENERAL

Capacity Chart	✓	Telescoping Length Indicator	✓
Controls Marked	✓	Load Indicator	✓
Operators Manual	✓	Anti-Two Block Alarm/Control	✓
Log Book-Insp., Maint., Repairs	✓	Cab and Safety Glass	✓
Proximity Warning Decals	✓	Ladder/Hand Holds	✓
Hand Signal Decal	✓	Levels	✓
Signal Horn	✓	Exhaust Pipes and Guards	✓
Backup Alarm	✓	Machinery Guards	NA
Swing Barricade	NA	Fuel Filler (Location)	✓
Fire Extinguisher	✓	Appearance/Housekeeping	✓
Boom Angle Indicator Elec.	✓	Instrument Check	✓
LMI AML	✓		

MACHINERY

Controls Operational	✓	Swing Mechanism/Circle	✓
Brakes/Clutches- Hyd./Man./Air	NA	Swing Brakes & Travel Locks	✓
Drums & Laggings	NA	Travel Mechanism/Chains	NA
Drum Guards	✓	Travel Brakes	NA
Drum Rotation Indicators	✓	Hydraulic System/Leaks	✓
Main Hydraulic Winch	✓	Air System/Leaks	NA
Aux. Hydraulic Winch	—	Pressure Settings	✓
Boom Hoist Pawl	NA	Carbody/Carrier	✓
Boom Hoist Kickout	NA	Revolving Frame	✓
Power Load Lowering	NA	Gantry/Mast	NA
Brake Locks & Dogs	NA	Master Clutch	NA
Outriggers & Float Locks	✓	All Shafts & Pins	✓

ATTACHMENTS

Boom	✓	Reeving	✓
Boom Hinge Pins	✓	Boom Stops	NA
Point Sheaves	✓	~~Rope Sockets~~ Swaged End	✓
Sheave Guards	✓	Cable Clamps	NA
Jib/Boom Extension	✓	Tires/Tracks & Pads	✓
Jib Stops	NA	Counterweight 33,069	✓
Hook & Block	✓	Jib Hook	✓
Weight & Capacities on Tackle	✓		

WIRE ROPE

Rope Location	Measured Diameter	Construction	Condition	Action
Main Hoist	16 mm	35x7	Good ①	
Aux. Hoist	16 mm	35x7	Not Deployed - Not Seen	
3rd Drum				
Boom Hoist				
Pendants				

PARTIAL LOAD FUNCTIONAL TEST

	Radius	Proof Load	Rated Load	Outriggers	Boom Direction
Load 1	32'	12,000 lb.	—	yes	Rear
Load 2					

Description of Load: Crane Counterweight

Basis for assigned load ratings: Functional

HOOKS

Hook	Throat Opening	Safety Latch	Wear	Twist
Main Load	3 1/4"	✓	✓	✓
Aux. Load	2 3/8"	✓	✓	✓
Aux. Block	2 5/8"	✓	✓	✓

Notes: ① 3 Broken wires widely separated - Monitor

[signature] — HESCO Representative

101 — HESCO #

√=Accepted O=Rejected NA=Not Applicable

This is a work sheet, not a certificate.

WARNING: There may be other components on your machine that should be checked.

Rev. 0/07

HESCO

HEAVY EQUIPMENT SERVICES COMPANY

P.O. Box 726
Niantic, CT. 06357

Phone: 860/739-4446
Fax: 860/739-4448

LOCAL ACKNOWLEDGMENT OF ATTENDANCE BY HESCO

I. Description of Equipment Tested and/or Examined on: 12/12/11 (Date)

(1) Owned/Operated by: Bay Crane Service of Long Island, Inc.
(2) Owner Identification of Crane 11
(3) Location of Unit: Hicksville, NY
(4) Type of Unit: Hydraulic All Terrain Crane
(5) Manufacturer: Tadano Model ATF65G-4 S/N 2051132

II. Description of Procedures Completed (Complete or check as appropriate)

(1) This is to Record That:
a) ____ Load Testing, Operational Testing and Examination
b) ✓ Operational Testing and Examination
c) ____ Load Indicating Device Checks for Accuracy
d) ____ Other

(2) Were Completed with Referral to Associated Regulations of:

USDOL/OSHA 1926.1400 Other

(3) A Report of these Procedures will be Submitted to the Administrative Office for Evaluation and Processing.
a) ____ Based on Previous Certification by
Cert.# Eff. Date Quad. Annual
b) ✓ Other Data:
Manufacturers Design Rating(s):
Owner Warranty
Other (explain)

(4) According to the Submitted Report, it is Anticipated that HESCO will Prepare and Issue:
a) ____ A USDL/OSHA Certification Form OSHA-71 for:
Annual Quadrenial Special

b) ✓ A HESCO Certification for:
Annual ✓ Special
c) ____ A USDL/OSHA Deficiency Form OSHA-72.
d) ____ A HESCO Deficiency Report is Attached. Upon Correction of Deficiencies, Sign and Forward Report for Issuance of HESCO Certification.

If a Notice of Deficiencies, USDL/OSHA form OSHA-72 is issued in this matter, the certification of the equipment is incomplete and a copy of form OSHA-72 will be forwarded to the local office of the Federal Authority as required by associated Federal Regulations.

Edward J. Sypniewski — 101 — 12/16/11
HESCO Attending Representative — HESCO # — Date

Responsible Site Representative Signature — Date

13. Contractor Crane Pre-Entry Checklist

CONTRACTOR CRANE PRE-ENTRY CHECKLIST

1	Crane Company: Bay Crane Service of LI, Inc.	Date of Entry: 4/4/12
	Crane Manufacturer/Crane Model/Serial Number/Crane Number: TadanoFaun ATF65G4 s/n 2031132 (#11)	Time of Entry: 7:00 AM
2	Date of Annual Inspection Expiration (attach copy)	12/17/11
3	Date of Quadrennial Inspection/Load Test Expiration (attach copy)	N/A
4	Name & phone number of Government Contracting Official (or designated local representative)	Contracting Official: Greg Pearman (NAVFAC) Phone Number: 860-235-2040

GENERAL INFORMATION

5	Narrative of crane/equipment lift: Unload unit from trailer with 4 point lift within 45' radius. Land unit on ground, reposition rigging to 4 points on top of tank, lift tank to vertical position. Swing left and place tank on prepared foundations. This procedure will be repeated for the remaining 2 tanks.			
6	**Is this a critical lift? (If no, skip items 29 –51)**		Yes ☐	No ☒
7	Location of lift?	670 Seaman's Neck Road, Seaford, NY		
8	Duration crane will be on the job site (hrs, days, weeks…)	2 days		
9	Does plan include a valid Certificate of Compliance from the contractor indicating that the crane complies with applicable OSHA regulations and ASME B30 standards [B30.5 (mobile cranes), B30.8 (floating cranes), B30.22 (articulating boom cranes), or B30.3 (construction tower cranes)]? (attach copy)		Yes ☒	No ☐
11	Does plan include valid medical certificate and proof of operator qualification from a source that qualifies crane operators (union, governmental agency, or an organization that tests and qualifies crane operators)? Verify qualification for each back-up operator (if provided) on the certificate of compliance. (attach copy)	Yes ☒	No ☐	N/A ☐
12	Does the plan designate a qualified Rigger-in-Charge/Lift Supervisor/Signal Person?		Yes ☒	No ☐
13	What is the weight of the heaviest load to be lifted?	17000 lbs.		
14	What is the weight of the rigging gear?	300 lbs.		
15	What is the total weight of the load to be lifted?	17300 lbs.		

16	**DEDUCTIONS**: What are the crane components (and their weights) that add to the weight of the load (hook, jib, etc.)?	a. Main Block	375 lbs.
		b. Aux. Block	n/a lbs.
		c. Jib (Stowed)	900 lbs.
	Parts Line Used: 3 parts	d. Jib (Erected)	n/a lbs.
	(Line Pull Each: 9600 lbs) X (No. of Parts line) = 28,800 Hoist Line Capacity	e. Whip Ball	n/a lbs.
	GROSS CAPACITY (from chart): 27,500	f. Other	lbs.
		TOTAL DEDUCTIONS (a-f)	1275 lbs.

17	What is the total weight to be lifted? **(Same as Item 15)**	**TOTAL**	17,300 lbs.				
18	What is the **net capacity** of the crane as configured? (**Gross Capacity** minus **Deductions**)		26,225 lbs.				
19	What **percentage** of crane capacity does this lift represent? (round up to the nearest whole number)		**65** %				
20	What is the **main boom length**? If a jib will be utilized, indicate the length and offset.	MAIN 73.8	JIB	OFFSET			
21	What is the **maximum radius**? (attach radius chart & range diagram); **Boom Angle**?	**Radius** 45'	**Angle.** 48				
22	Does the plan include the manufacturer's load chart for entire range of lift(s)? (attach copy) **Quadrants to be used:** all				Yes ☒	No ☐	
23	Does plan require a railroad or environmental clearance?				Yes ☐	No ☒	N/A ☐
24	Does the operation require Airfield Clearance? (MCB Quantico Airfield Manager 703-784-1449/2085)				Yes ☐	No ☒	N/A ☐
25	Does crane have a **wind indicating device** mounted to detect maximum wind speed (**EM385, 16.A.08.l**)?				Yes ☐	No ☒	N/A ☐
26	For crawler crane, does the plan indicate area restrictions for operation?				Yes ☐	No ☐	N/A ☒
27	For mobile crane mounted on barge, is crane equipped with load indicating device? marine type 'list and trim' indicator (readable in one-half degree increments)? does plan include a revised load chart?				Yes ☐	No ☐	N/A ☒
28	For floating crane, does plan include maximum allowable list?				Yes ☐	No ☐	N/A ☒
29	What are the environmental conditions under which crane operations are to be stopped in addition to those mentioned in the EM 385 1-1?	Describe: Wind exceeding 22 mph. Lightning storms.					

CRITICAL LIFTS

30	What circumstances classify this operation as a critical lift? **(Refer to EM 385 1-1 section 16.H)**	Describe:			
31	What are the exact dimensions of the load? (L x W x H)				
32	Does the plan indicate the crane position? (Overhead view)			Yes ☐	No ☐
33	What is the **maximum height** of the lift?				
34	What is the **maximum boom angle**?				
35	What is the name of the operator?				
36	Indicate name(s) of backup operator (if required).				
37	Does the plan show lift points?			Yes ☐	No ☐
38	Does the plan describe the rigging procedures? **(Attach rigging plan)**			Yes ☐	No ☐
39	Does the plan indicate rigging hardware requirements?			Yes ☐	No ☐
40	For personnel lifts, does the plan demonstrate compliance with **29 CFR 1926, Subpart CC**?		Yes ☐	No ☐	N/A ☐
41	Have the EM 385-1-1 requirements been reviewed for this lift?		Yes ☐	No ☐	N/A ☐
42	What are the coordination and communication requirements for the lift (e.g., radio, hand signals)? What provisions are in place for blind lifting or tandem lifts?	Describe:			
43	For tandem or tailing crane lifts, does the plan indicate the make and model of the crane, boom length, boom angle, weight to be lifted swing speeds, and any requirement for an equalizer beam?		Yes ☐	No ☐	N/A ☐
44	For floating cranes, refer to questions 26-28 **(Attach copy of 3rd party inspection)**				

45	Is a sketch provided showing the position of each crane? (refer to item 57)	Yes ☐	No ☐	N/A ☐
46	Does the sketch show the location of all nearby utilities both underground and overhead? (for lifts in the vicinity of utilities, refer to items 54-56)	Yes ☐	No ☐	N/A ☐
47	Does the sketch show the location of all outriggers/crawler tracks and the size/thickness of any outrigger pads and/or cribbing for intended use?	Yes ☐	No ☐	N/A ☐
48	What is the name of the lift supervisor?			
49	Does the plan indicate the qualifications of the lift supervisor?		Yes ☐	No ☐
50	What are the names of the riggers?			
51	Does the plan indicate the qualifications of the riggers?		Yes ☐	No ☐
52	Did all involved personnel (Operator, Riggers, Lift Supervisor, etc.) sign the critical lift plan?		Yes ☐	No ☐

RIGGING DIAGRAM/SKETCH (Draw or Attach)

53	Construct rigging diagram below to show the lift points, description of the rigging procedures and hardware requirements (i.e. hooks, shackles, slings, eyebolts, spreader bars) including Working Load Limits (WLL) and angles of any applied slings etc. **See Enclosure 11 for sample:**

See Attached

OVERHEAD AND UNDERGROUND UTILITY ASSESSMENT

54 **Survey of Area**: Before beginning any project, you must first survey your work area to find power lines at the job site. (See job site sketch on reverse side). In addition to overhead power lines, it may be necessary to identify underground utilities e.g. water, sewage, gas or electric.

55 **Identify:**

After finding all of the utilities at your site, identify the activities you'll be doing that may put you or your workers at risk. Mark one or more of the following:

- ☑ Cranes (mobile or truck mounted)
- ☐ Drilling rigs
- ☐ Backhoes/Excavators
- ☐ Long-handed tools
- ☐ Other tools/high-reaching equipment
- ☐ Concrete pumper
- ☐ Aerial lifts
- ☐ Dump trucks
- ☑ Ladders
- ☐ Material Handling & Storage
- ☐ Scaffolding
- ☐ Electronic News Gathering Trucks (ENG)
- ☐ Other _____

56 **Eliminate or Control:**

After identifying the utility and high-risk activities on our job site, determine how to eliminate or control the risk of electrocution or other hazard (a successful determination is often reached only after consultation with the utility). Mark one or more or the following:

- ☐ Move the activity
- ☐ Change the activity
- ☐ Have the utility de-energize
- ☐ Have the Utility more power line
- ☐ Boom cage device
- ☐ Proximity device
- ☐ Insulated link
- ☐ Fence
- ☐ Cones
- ☐ Use warning lines with flags
- ☐ Use barrier protection (insulated sleeves or blankets
- ☐ Use an observer
- ☐ Use a protective technology
- ☐ Use ground level site barrier

☒ **NO OVERHEAD HAZARDS**

Always maintain your minimum safe clearance distance from power lines, except when the utility has been de-energized and is visibly grounded.

Voltages	Distance from Power Line
UNKNOWN	20 Feet
Less than 50 kV	10 Feet
For higher kV, refer to EM 385 1-1 Table 11-1	

WARNING!
It is unlawful to operate any piece of equipment within 10' of energized lines

57	**Jobsite Sketch:** (Draw in location of utilities and their proximity to construction site, include such things as; proposed excavations, location of heavy equipment, scaffolding, material storage areas, etc.) See Attached

Jobsite Sketch

14. Lift Day Checklists

14.1. Procedures for Conducting Multi-Purpose Equipment Lifts

14.2. Contractor Crane or Rigging Operation Checklist

14.3. Contractor Crane Initial/Start-Up & ROICC P-2 Operation Checklist

14.4. Crane Operator's Daily Check List

PROCEDURES FOR CONDUCTING MULTI-PURPOSE EQUIPMENT (MPE) LIFTS

1. Contractor to post Certificate of Compliance (P-1) in cab of MPE.
2. Contractor Start-Up Inspection/ROICC P-2 Operation Checklist will be conducted prior to lift. Inspections will be maintained on file for one year by NAVFAC.
3. A government accepted Activity Hazard Analysis shall be available on-site and available for review by NAVFAC.
4. Contractor to provide equipment operator qualifications (ensure operator is trained to perform such lifts).
5. Contractor to provide rigger qualifications.
6. Contractor to ensure MPE load chart is posted in cab and available for review by NAVFAC.
7. Contractor to ensure equipment operator's daily inspection report is completed if required and made available for review by NAVFAC.
8. Contractor to notify NAVFAC ET prior to all suspended lifts.
9. Contractor to demonstrate equipment is properly configured prior to lift.
10. Contractor to provide proof from OEM that equipment is authorized for such lift, and lifts are made IAW OEM.

CONTRACTOR CRANE OR RIGGING OPERATION CHECKLIST

		YES	NO
1	Is the Certificate of Compliance, P-1, in the operator's cab (or in the contractor's on-site office for rigging operations) with the current operator's name listed?		
2	Is the crane/machine transited to and from the job site correctly? Are the OEM instructions for travel being followed?		
2	Does the operator know the weight of the load to be lifted?		
3	Is the load to be lifted within the crane/machine manufacturer's rated capacity in its present configuration?		
4	Are outriggers or stabilizers required?		
5	If outriggers are required, are outriggers fully extended and down, and the crane load off the wheels?		
6	Is the crane/machine level and on firm ground, if the ground is not firm is the crane/machine blocked?		
7	If blocking is required, is the entire surface of the outrigger pad supported and is the blocking material of sufficient strength to safely support the loaded outrigger pad?		
8	If outriggers are not used, is the crane/machine rated for on-rubber lifts by the manufacturer's load chart? If stabilizers are used and not outriggers and the wheels are not off the ground is this the correct setup in accordance with the OEM?		
9	Is the swing radius of the crane counterweight clear of people and obstructions and accessible areas within the swing area barricaded to prevent injury or damage?		
10	Has the hook been centered over the load in such a manner to minimize swing?		
11	Is the load well secured and balanced in the sling or lifting device before it is lifted more than a few inches?		
12	Is the lift and swing path clear of obstructions?		
13	If rotation of the load being lifted is hazardous, is a tag or restraint line being used?		
14	Are personnel prevented from standing or passing under a suspended load?		
15	Is the operator's attention diverted?		
16	Are proper signals being used at all times? Is the operator responding properly to the signals? Are radios used for blind lifts?		
17	Is the load lifted a few inches to ensure it is secure and balanced?		
18	Are empty hooks lashed or otherwise secured during travel to prevent swinging?		
19	Does the operator remain at the controls while the load is suspended?		
20	Do the operations ensure that side loading is prohibited?		
21	Are personnel prevented from riding on a load?		
22	Are start and stop motions in a smooth fluid motion (no sudden acceleration or deceleration)?		
23	If operating near electric power lines, are the rules and guidelines understood and adhered to?		
24	Is the lift a critical lift?		
25	If so, are all regulations understood and check-off sheets initialed and signed off?		
25.1	Are any overhead power lines in the vicinity?		
25.2	If so, are complex lift rules and 1926.550(a)(15) being followed?		
26	If pick and carry operations are allowed and performed, are OEM directions followed (e.g. rotation lock engaged, boom centered over front or rear, etc.)?		
26	When the crane/machine is left unattended, is it in a safe condition?		
27	Is rigging gear undamaged and acceptable for the application?		

FIGURE P-2 (1 of 2)

28	Does rigging gear meet applicable ASME or host country standards (e.g. ASME B30.9 for slings, B30.10 for hooks, B30.26 for hardware such as shackles, safety hoist rings, eyebolts, etc, B30.20 for below the hook lifting devices, etc.)?		
29	Is the rigging gear inspected prior to use?		
30	Is chafing gear used to protect slings (especially synthetic slings) and equipment from damage due to sharp corners and edges?		
31	Is the rigging gear used in accordance with its working load limit? Is the load limit visible?		
32	Are positive latching devices used on crane and rigging hooks, or are the hooks "moused"?		

Contractor:	Subcontractor:
Location:	Date:
Notes:	
Signature of Contracting Officer's Representative:	

FIGURE P-2 (2 of 2)

CONTRACTOR CRANE INITIAL/START-UP & ROICC P-2 OPERATION CHECKLIST

CRANES AND DERRICKS USACE EM 385-1-1 SECTION 16.D.08
MANAGEMENT OF WEIGHT HANDLING EQUIPMENT, NAVFAC P-307, DEC 09, Change 2 –August 2011
(TO BE USED FOR CONTRACTS WITH USACE EM 385-1-1, 15 SEPTEMBER 2008)

CONTRACT NUMBER: _____ **CONTRACTOR:** _____ **DATE:**_____

INSPECTION COMPETENT PERSON:_____

CRANE MAKE: _____ **MODEL:** _____ **SERIAL #:** _____ **YEAR:** _____

SPECIAL NOTES:

1) Inspections shall be as required by manufacturer and in accordance with ASME and OSHA (16.D.01)
2) Provide GDA 24 hours notice (16.D.03)
3) Inspections shall be performed by a qualified person (16.D.07)
4) Include functional testing (16.D.07b)
5) Validate documentation of: (as applicable)
(a) Initial Inspection (required prior to use on all NAVFAC projects after crane assembly - 16.D.07);
(b) Periodic Inspection/Comprehensive (annually or as recommended by the manufacturer - 16.D.10)
(c) Frequent Inspections (required at monthly intervals - 16.D.09)

START UP INSPECTION/OPERATION CHECKLIST (MINIMUM ITEMS):	Pass	Fail	ROICC
OPERATOR QUALIFICATIONS			
1. Operator qualifications: 16.B.01			
a. proof of practical examination (16.B.04)			
b. proof of physical qualification examination *(Signed by Physician ONLY)* (06.B.05)			
DOCUMENTS			
2. Validate the following documents are in the cab at all times (16.G.01) a. Operating Manual b. Manual Load Rating Chart c. Visible Load Chart d. Crane Log Book			
3. Record of crane and hoisting equipment tests and inspections – maintained on site (16.D.02) *** Refer to 16.F & 16.F.02 and 16.F.03 for operational and load testing.			
4. Verify a completed Certificate of Compliance (P-1) is with the crane.			
EQUIPMENT CONDITION, SAFETY DEVICES, OPERATIONAL AIDS, & LOAD CAPACITY			
5. Verify loads will not exceed the cranes rated capacity for the crane configuration.			
6. Verify crane lifts will not meet "critical lift" definition. *If lift meets criteria, prepare/submit a critical lift plan with Activity Hazard Analysis before proceeding with lift.			
7. Verify that all safety devices and operational aids as listed in 16.E.01 and 16.E.03 are on each crane.			
8. Validation that all safety devices are in proper working order (16.E.02).			
9. Verify load swing or counterweight path will not be obstructed , adequate clearance from electrical sources is maintained, and load will not travel over personnel.			
10. Verify use of standard communication/signal system is understood by all involved in lift.			
11. Verify control mechanisms for proper operation.			

START UP INSPECTION/OPERATION CHECKLIST (MINIMUM ITEMS):	Pass	Fail	ROICC
12. Verify brake actions to ensure brakes are functioning normally and that there is no slippage, excessive play or binding. Exercise brakes to assure they are dry.			
13. Verify control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.			
14. Verify operator aids and other safety devices for proper functioning and accuracy of settings.			
15. Check chords and lacing for damage, bent members, cracked welds, etc.			
16. Check hydraulic and pneumatic systems for deterioration or leaking – with particular emphasis given to those that flex during normal operation;			
17. Check hooks and latches for deformation, chemical damage , cracks, and wear;			
18. Verify rope for proper spooling onto the drum(s) and sheaves(s) and rope reeving for compliance with crane or derrick manufacturer's specifications.			
19. Check electrical apparatus for proper functioning, signs of excessive deterioration, dirt, and moisture accumulation.			
20. Check Tires (when in use) for recommended inflation pressure and condition.			
21. Verify ground conditions around the equipment for proper support, including ground settling under and around outriggers and support foundations, ground water accumulation, or similar condition.			
22. Verify hydraulic system for proper fluid level.			
23. Verify the equipment is in level position and on firm ground, and after each move and setup; If the ground is not firm is the crane/machine blocked.			
24. If blocking is required, is the entire surface of the outrigger pad supported and is the blocking material of sufficient strength to safely support the loaded outrigger pad?			
25. If outriggers are required, are outriggers fully extended and down, and the crane load off the wheels?			
26. If outriggers are not used, is the crane/machine rated for on-rubber lifts by the manufacturer's load chart? If stabilizers are used and not outriggers and the wheels are not off the ground, is this correct setup in accordance with the OEM?			
27. If pick and carry operations are allowed and performed, are OEM directions followed (e.g. rotation lock engaged, boom centered over front or near, etc.)?			
28. Check operator cab windows for significant cracks, breaks or other deficiencies that would hamper the operator's view.			
29. Check safety devices and operational aids for proper operation.			
30. Check wedges and supports for looseness or dislocation (climbing tower cranes).			
31. Check braces and guys supporting crane masts for safe condition and proper tension; anchor bolt base connections for tightness or retention of preload; wedges and supports of climbing cranes for tightness and proper positioning.			
32. For derricks, inspect all chords and lacing, tension in guys, plump of the mast, and derrick mast fittings and connections for compliance with the manufacturer's recommendations.			

START UP INSPECTION/OPERATION CHECKLIST (MINIMUM ITEMS):	Pass	Fail	ROICC
33. Barge or pontoon ballast compartments for proper ballast; a. deck loads for proper securing b. chain lockers c. storage d. fuel compartments e. battening of hatches f. firefighting and lifesaving equipment in place and functional g. hull void and compartments sounded for leakage (floating cranes and derricks)			
CRANE/MACHINE OPERATION (Verified when the crane/machine is in operation)			
34. Does operator know weight of load to be lifted?			
35. Has the hook been centered over the load in such a manner to minimize swing?			
36. Is the load well secured and balanced in the sling or lifting device before it is lifted more than a few inches?			
37. If rotation of the load being lifted is hazardous, is a tag or restraint line being used?			
38. Are personnel prevented from standing or passing under a suspended load?			
39. Is the operator's attention diverted?			
40. Are empty hooks lashed or otherwise secured during travel to prevent swinging?			
41. Does the operator remain at the controls while the load is suspended?			
42. Do the operations ensure that side loading is prohibited?			
43. Are personnel prevented from riding the load?			
44. Are start and stop motions in a smooth fluid motion (no sudden acceleration or deceleration)?			
45. If operating near electric power lines, are the rules and guidelines understood and adhered to?			
46. When the crane/machine is left unattended, is it in a safe condition?			
RIGGING			
47. Is rigging gear undamaged and acceptable for the application?			
48. Is the rigging gear visually inspected prior to use?			
49. Is chafing gear used to protect slings (especially synthetic slings) and equipment from damage due to sharp corners and edges?			
50. Is the rigging gear used in accordance with the its working load limit? Is the load limit visible?			
51. Are positive latching devices used on crane and rigging hooks, or are the hooks "moused"?			

START UP INSPECTION/OPERATION CHECKLIST (MINIMUM ITEMS):	Pass	Fail	ROICC
WIRE ROPE INSPECTION			
52. Wire Rope Inspection per 16.D.12 (a)			
Competent person shall perform this inspection for each shift, visually inspecting all running ropes, counterweight ropes and trolley ropes, if provided. *Visual inspection shall concentrate on identifying apparent deficiencies in wire rope as categorized below. Opening of wire rope or booming down is not required as part of this inspection.* **MARK THIS SECTION WITH THE OVERALL INSPECTION RESULTS:**			
CATEGORY I DEFICIENCY: *Competent Person makes immediate determination whether it constitutes a safety hazard. If so, wire rope shall not be used unless 'Removal from Service' provisions are followed.*			
53. Distortion of wire rope structure such as kinking, crushing, un-stranding, birdcaging, main strand displacement, core failure or protrusion between the outer strands			
54. General corrosion.			
55. Electric arc (from a source other than power lines) or heat damage.			
56. Severely corroded or broken wires at end connections; severely corroded, cracked, bent, or improperly applied end connections.			
CATEGORY II DEFICIENCY: *Employer makes immediate determination whether it constitutes a safety hazard. If so, wire rope shall not be used unless 'Removal from Service' provisions are followed.*			
57. Number, distribution and type of visible wires are as per *IPT's Crane and Rigging Training Manual*.			
58 A diameter reduction of more than 5% from normal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.			
CATEGORY III DEFICIENCY: *Operations involving the use of the wire rope in question shall be prohibited. If so, wire rope shall not be used unless 'Removal from Service' provisions are followed.*			
59. Core failure or protrusion in rotation resistant ropes.			
60. Electric contact with a power line.			
61. A broken strand (rotation resistant ropes).			
CRITICAL REVIEW ITEMS: *Particular attention should be given to these items during wire rope inspection.*			
62. Rotational resistant wire rope in use.			
63. Boom hoist ropes and sections of rope subject to rapid deterioration such as at flange points, crossover points, and repetitive pickup points on drums.			
64. Sections in contact with saddles, equalizer sheaves, or other sheaves where rope travel is limited.			
65. Sections of the rope at or near terminal ends where corroded or broken wires may protrude.			
66. Sections subject to reverse bends and sections normally hidden during visual inspections, such as parts passing over outer sheaves			

CRANE OPERATOR'S DAILY CHECK LIST

CRANE NO.	TYPE/CAPACITY	LOCATION	CERTIFICATION EXPIRATION DATE	SHIFT	HOUR METER		HRS	DATE
				1 2 3	START	STOP	OPERATED	

OPERATORS

LEGEND

S = SATISFACTORY U = UNSATISFACTORY NA = NOT APPLICABLE

	1 WALK AROUND CHECK	S	U	NA
a	Safety Guards and Plates			
b	Carrier Frame and Rotate Base *			
c	General Hardware			
d	Wire Rope *			
e	Reeving *			
f	Block *			
g	Hook *			
h	Sheaves or Sprockets *			
i	Boom and Jib *			
j	Gantry, Pendants, and Boom Stops *			
k	Walkways, Ladders, and Handrails			
l	Windlocks, Stops, and Bumpers			
m	Tires, Wheels and Tracks			
n	Leaks			
o	Outriggers and Stabilizers *			
p	Load Chain *			
q	Area Safety *			

	2 MACHINERY HOUSE CHECK	S	U	NA
a	Housekeeping *			
b	Diesel Engine and Generator *			
c	Leaks			
d	Lubrication			
e	Battery			
f	Lights			
g	Glass			
h	Clutches and Brakes *			
i	Electric Motors *			
j	Auxiliary Engine and Compressor			
k	Danger/Caution Tags *			
l	Fire Extinguishers			
m	Hoist Drum Pawls and Rachet *			

	3 OPERATOR CAB CHECK	S	U	NA
a	Gauges			
b	Indicator and Warning Lights			
c	Visibility *			
d	Load Rating Charts *			
e	List/Trim Indicator (Floating Cranes) *			
f	Boom Angle/Radius Indicator *			
g	Fire Extinguisher			
h	Level Indicator (Mobile Cranes) *			
i	Danger/Caution Tags *			

	4 OPERATIONAL CHECK	S	U	NA
a	Area Safety *			
b	Outriggers and Stabilizers *			
c	Unusual Noises			
d	Control Action *			
e	Wire Rope or Chain *			
f	Brakes and Clutches *			
g	Boom Angle/Radius Indicator *			
h	Limit Switches *			
i	Emergency Stop *			
j	Other Operational Safety Devices *			
k	General Safety Devices			
l	Fleeting Sheaves			

INSTRUCTIONS - Check all applicable items indicated, each shift. Suspend all operations immediately when observing an unsatisfactory condition of any item indicated with an asterisk (*) unless the condition has been reviewed and continued operation has been authorized by the activity engineering organization. In addition, suspend operation when any unsafe condition is observed and immediately notify supervisor. For any unsatisfactory item, identify the specific component and describe the deficiency in the "Remarks" block.

SUPERVISOR'S SIGNATURE

DATE

FIRST OPERATOR'S SIGNATURE	OPERATOR'S SIGNATURE	OPERATOR'S SIGNATURE	OPERATOR'S SIGNATURE
DATE	DATE	DATE	DATE

REMARKS

FIGURE 9-1

Backup Operator 4/5/12

STATE OF NEW YORK - DEPARTMENT OF LABOR

CRANE OPERATOR CERTIFICATE OF COMPETENCE

RANDALL H HILLS

CLASS A
UNRESTRICTED

CERT# 02-0119
EXPIRES 11/14

MUST BE CARRIED WHEN OPERATING CRANE

STATE OF NEW YORK - DEPARTMENT OF LABOR

CRANE OPERATOR CERTIFICATE OF COMPETENCE

RANDALL H HILLS

CLASS A
UNRESTRICTED

CERT# 02-0119
EXPIRES 11/14

MUST BE CARRIED WHEN OPERATING CRANE